PB84-103761

Household Hazardous Waste Disposal Project. Metro Toxicant Program Report Number 1C. Public Opinions and Actions

Municipality of Metropolitan Seattle-METRO, WA

Prepared for

Environmental Protection Agency, Seattle, WA

Aug 82

PUBLISHED SEARCH

U.S. DEPARTMENT OF COMMERCE
National Technical Information Service
NTIS®

50272-101

REPORT DOCUMENTATION PAGE	1. REPORT NO. MMS/WQR - 8213	2.	3. Recipient's Accession No. PB84 103761

4. Title and Subtitle

PUBLIC OPINIONS AND ACTIONS
Household Hazardous Waste Disposal Project
Metro Toxicant Program Report No. 1C

5. Report Date
Date of Issue: August 1982

6.

7. Author(s)
David V. Galvin, Leonard Guss, and Judith L. Leraas

8. Performing Organization Rept. No.

9. Performing Organization Name and Address
Municipality of Metropolitan Seattle (METRO)
Water Quality Division, Toxicant Control Planning Section
821 Second Avenue, Seattle, WA 98104

10. Project/Task/Work Unit No.

11. Contract(C) or Grant(G) No.
(C)
(G) #P-000233-01

12. Sponsoring Organization Name and Address
U.S. Environmental Protection Agency - Region 10
Washington State Operations Office
Lacey, Washington 90503

13. Type of Report & Period Covered
Final; 1981-1982

14.

15. Supplementary Notes

16. Abstract (Limit: 200 words)

As part of Metro's Household Hazardous Waste Disposal Project, a pilot study was conducted in the Seattle area to determine public awareness of and attitudes about the issues of toxic/hazardous substances in the home and their safe disposal. Metro also wished to determine actual response to a collection program in a brief, neighborhood test. An initial telephone survey was conducted in the Seattle metropolitan area and the test neighborhood. A three-week collection project for pesticides, solvents, and used motor oil was run in the 4000 household neighborhood in February, 1982, followed by a telephone survey to help interpret project results.

This report describes the preparation, procedures, and findings of the surveys and pilot study. Recommendations have been developed for a regional education and collection system for household hazardous wastes in the Seattle/King County area.

17. Document Analysis a. Descriptors

Household goods; Hazardous Materials; Waste Disposal; Pesticides; Solvents; Lubricating Oils; Paints; Cleaning Agents; Public Opinion.

b. Identifiers/Open-Ended Terms

Toxicants; Consumer Products; Household hazardous waste disposal.

c. COSATI Field/Group

18. Availability Statement: Release Unlimited	19. Security Class (This Report) Unclassified	21. No. of Pages 130
	20. Security Class (This Page) Unclassified	22. Price

(See ANSI-Z39.18) See Instructions on Reverse

OPTIONAL FORM 272 (4-77)
(Formerly NTIS-35)
Department of Commerce

PB84-103761

PUBLIC OPINIONS AND ACTIONS

Household Hazardous Waste Disposal Project

METRO

Metro Toxicant Program Report No. 1C

Water Quality Division
August 1982

REPRODUCED BY
NATIONAL TECHNICAL
INFORMATION SERVICE
U.S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA 22161

Municipality of Metropolitan Seattle

NOTICE

THIS DOCUMENT HAS BEEN REPRODUCED FROM THE BEST COPY FURNISHED US BY THE SPONSORING AGENCY. ALTHOUGH IT IS RECOGNIZED THAT CERTAIN PORTIONS ARE ILLEGIBLE, IT IS BEING RELEASED IN THE INTEREST OF MAKING AVAILABLE AS MUCH INFORMATION AS POSSIBLE.

August, 1982

PUBLIC
OPINIONS AND ACTIONS

REPORT C

OF THE

HOUSEHOLD HAZARDOUS WASTE DISPOSAL PROJECT

METRO TOXICANT PROGRAM #1

by

David V. Galvin
Toxicant Control Planning Section
Municipality of Metropolitan Seattle

Leonard M. Guss
Judith L. Leraas
Leonard Guss Associates, Inc.

EPA Grant No. P-000233-01

Project Officer
Al Ewing
Environmental Protection Agency
Washington Operations Office
Olympia, Washington

4b

DISCLAIMER

Although the research or investigation described herein has been funded in part by the U.S. Environmental Protection Agency through grant No. P-000233-01 to the Municipality of Metropolitan Seattle (Metro), it has not been subjected to the Agency's peer and administrative review and therefore does not necessarily reflect the views of the Agency, and no official endorsement should be inferred.

HOUSEHOLD HAZARDOUS WASTE DISPOSAL
REPORT C: PUBLIC OPINIONS AND ANSWERS

FOREWORD AND ACKNOWLEDGEMENTS

HOUSEHOLD HAZARDOUS WASTE -- WHAT'S IT ALL ABOUT? To most people, hazardous wastes are found only in Love Canal, in large industrial dumps or in streams of toxic chemicals flowing from factory outfalls. But hazardous waste is really any substance that, when disposed of, poses a risk (e.g., ignitable, toxic) to people or the environment.

A wide range of household products fits such a definition: pesticides, automotive oil, solvents, household cleaners, antifreeze and others. Some of the chemicals found in these products are known or suspected mutagens, carcinogens or teratogens. Often they are toxic to human beings, fish and wildlife in small amounts. Every day, literally tons of these chemicals are washed down drains or dumped in the trash. Because they come from many small, diverse sources (households) rather than a few large, localized sources (industries), they are difficult to control and are not currently regulated.

In addition, sales of a number of household toxic substances -- including certain pesticides and vinyl chloride-containing products -- have been banned or severely restricted. Quantities of these banned products can still be found in people's homes. The average consumer has had no choice, until now, but to dispose of these toxic products in ways allowing their eventual release into the environment.

WHY IS METRO CONCERNED ABOUT HOUSEHOLD HAZARDOUS WASTE? As the regional agency responsible for water quality and sewage treatment--as well as transit--in King County, Metro is interested in keeping the region's waters clean. Metro has initiated a Toxicant Pretreatment Planning Study, a Toxicant Inventory Study and other related projects as part of its commitment to assess the presence, sources, fates and effects of toxic substances in the local waters. The studies will help Metro identify problems and formulate effective control programs for point and nonpoint sources of problem toxicants.

HOUSEHOLDS CONTRIBUTE SIGNIFICANTLY to wastewater flows to the sewage treatment plants and solid waste to landfills. House, garden and garage products, such as paints, preservatives, pesticides, antifreeze and oil, can contaminate

local stormwater runoff and streams. While not large when compared to industrial contributions, household hazardous wastes can be a source of problem toxicants in local waters.

BECAUSE OF THESE CONCERNS, METRO HAS BEEN STUDYING this issue and its implications as part of its Toxicant Control Program. In 1981 Metro received a water quality management grant from the U.S. Environmental Protection Agency to develop a disposal plan for small quantities of household toxicants. The Household Hazardous Waste Disposal Project was established as an interagency effort, coordinated by Metro and based on a working committee representing governmental agencies, private businesses, environmental and public interest groups, and concerned citizens. The goal of the project was to reduce the level of toxicants entering the environment by providing a solution to the problem of unsafe or improper disposal of household hazardous wastes.

THIS DESCRIPTION OF THE PILOT STUDY -- "PUBLIC OPINIONS AND ACTIONS"-- is one part of the final report of the Household Hazardous Waste Disposal Project, which includes the following components (separately bound):

A. Summary,
B. Toxicants in Consumer Products,
C. Public Opinions and Actions,
D. SLEUTH -- Educational Activities,
E. Directory.

The Pilot Study was a critical part of the project. It collected valuable information about people's awareness of and attitudes about toxic and hazardous substances in their homes. It also assessed their willingness to make special efforts to dispose of waste products containing such substances in a safe manner.

The HHWD Committee was essential to the planning, refinement and implementation of the pilot study. Appendix A attests to the level of effort put in by the committee members in this laborious process. Deserving special note for their assistance in the collection project at the Fire Station are Judy Fey (U.S. EPA), Jim Gurney, and Pat Ewing (Chemical Processors, Inc.).

Leonard Guss and Judy Leraas of Leonard Guss Associates, Inc., far exceeded their contractual obligations in providing professional advice and carrying out all aspects of the public opinion surveys. We enjoyed our association and benefitted from their involvement.

The Seattle Fire Department provided invaluable assistance to the study by allowing use of Fire Station No. 24 for our collection site. Amalgamated Services, Inc., Chemical Processors, Inc., and Chem-Security Systems, Inc., also made the study possible by agreeing, as a public service, to ship, transfer and accept for disposal, respectively, the barrels of hazardous waste generated in the study.

George Jones and Glenn Sugiyama of Metro helped resolve problems of insurance and liability associated with the study. Joe Simmler, Supervisor of the Toxicant Program at Metro, provided much appreciated advice and support throughout the project.

WE HAVE ASSEMBLED AS MUCH INFORMATION AS POSSIBLE about the Pilot Study in this report to provide in one place all of the details of the public opinion assessment and the collection project. If you would like more information on the subject, access to the other reports or information on related activities please contact Metro at (206) 447-5885. We trust that you will find this report interesting and useful. Your comments are welcome.

David V. Galvin
Project Manager, Metro

Susan M. Ridgley
Project Coordinator
Environmental Intern Program/NW

ABSTRACT

As part of Metro's Household Hazardous Waste Disposal Project, a pilot study was conducted in the Seattle area to determine public awareness of and attitudes about the issues of toxic/hazardous substances in the home and their safe disposal, and to determine actual response to a collection program in a short, neighborhood test. An initial telephone survey was conducted in the Seattle metropolitan area and the test neighborhood. A three-week collection project for pesticides, solvents, and used motor oil was run in the 4,000 household neighborhood in February, 1982. A follow-up telephone survey was conducted in the test neighborhood to help interpret project results.

People in the Seattle area are very aware of the presence of products in their homes that can be considered toxic or hazardous. This awareness is related more to acute poisoning of humans than to environmental effects. The high level of concern expressed about disposal of such products, however, is primarily based on environmental reasons.

The presence of toxic/hazardous household products is widespread. Despite their ubiquitous nature, people do not tend to dispose of waste amounts frequently.

During the short waste collection test, 55 people participated by bringing old or waste pesticides or waste solvents to a Fire Station or used motor oil to a service station. Ninety pounds of solid and six gallons of liquid hazardous wastes (pesticides and solvents) were collected, filling over two 55-gallon drums; approximately half of these wastes were banned pesticides. In addition, about 40 gallons of used oil was recycled.

The follow-up survey revealed that less than half of the test population were aware of the pilot study despite door-to-door leafletting and other notification methods. Most people who were aware could give no specific reason for not participating.

Recommendations have been developed as a result of this study for a regional education and collection system for household hazardous wastes in the Seattle/King County area.

TABLE OF CONTENTS

page

FOREWORD AND ACKNOWLEDGEMENTS iii

ABSTRACT vi

TABLE OF CONTENTS vii

LIST OF FIGURES ix

LIST OF TABLES x

I. INTRODUCTION 1

- The Pilot Study 1

II. INITIAL AWARENESS AND ATTITUDES SURVEY 5

- Objectives 6
- Scope 7
- Methodology 7
- Study Method 7
- Characteristics of the Sample 11
- Findings 13
- Conclusions 27

III. NEIGHBORHOOD COLLECTION PROJECT 31

A. Design 31

B. Information Transfer 31

C. Collection Procedure 41

D. Disposal 50

E. Results 50

IV. FOLLOW-UP AWARENESS AND ATTITUDES SURVEY 63

A. Objectives 64

B. Method 65

C. Findings 65

D. Conclusions 74

TABLE OF CONTENTS (CONTINUED)

page

V. PROJECT CONCLUSIONS 75

- Awareness 75
- Response 76
- Planning 76

REFERENCES 79

APPENDICES

A. Pilot Study Design Considerations 81

B. Initial Survey Questionnaire 97

C. "Waste Information" Inventory Sheets 101

D. Follow-up Survey Questionnaire 119

LIST OF FIGURES

		page
1.	Concept of Pilot Project Design	2
2.	Selected Characteristics: City of Seattle 1980 Census Tracts	9
3.	Flyer: "Wanted-Toxicants"	32
4.	Brochure: "Toxic Substances in Your Home"	33
5.	*Seattle Times* Article	42
6.	Metro News Release	43
7.	Test Protocol Schematic for Waste Separations	47
8.	On-Site Quiz	48
9.	"Waste Information" Inventory Form	49
10.	EPA Hazardous Waste Determination	51
11.	DOE Hazardous Waste Determination	52
12.	Hazardous Waste Label	53
13.	Hazardous Waste Manifest Form	54
14.	*Seattle Post-Intelligencer* Article	59
15.	*Clear Water Watch* Article - March 1982	60
16.	*Clear Water Watch* Article - April 1982	61
17.	Awareness of Metro Project	66
18.	Likelihood of Using Collection Sites	70
19.	Who Should Pay for Toxic Waste Disposal	71
20.	Importance Ascribed to Proper Disposal of Household Toxicants	73

LIST OF TABLES

page

1. Profile of the Sample Respondents 11
2. Respondents Who Change Automobile Oil/ Antifreeze Themselves 12
3. Unassisted Identification of Toxic Household Products 14
4. Proportion of Homes Containing Selected Toxic Substances 15
5. Perceptions of the Hazard Associated with Selected Toxic Substances 17
6. Proportions of Sample Segments Assigning "High Hazard" Ratings 18
7. Disposal of Any of Ten Selected Products During the Past Year or So 18
8. Disposal Methods for Each of Ten Toxic Household Products 20
9. Perceived Importance of Toxic Substance Disposal 21
10. Perceived Willingness to Buy Smaller Quantities of Toxic Substances 22
11. Perceived Willingness to Buy Alternative, Non-Toxic Products 23
12. Perceived Willingness to Use a Waste Disposal Center 24
13. Likelihood of Residents Using Proposed Disposal Services 25
14. Waste Pesticides Turned In During Collection Project 56
15. Waste Solvents Turned in During Collection Project 58
16. How Did You Learn of the Pilot Project? 67
17. Participation in the Project 67
18. Reasons for Participating or Not Participating in the Project 68

LIST OF TABLES (CONTINUED)

page

19. Toxic/Hazardous Items Possessed by Respondents and Available for Discard. 69

20. Reasons for Concern Regarding Household Toxicants . 69

I. INTRODUCTION

One of the objectives of the Household Hazardous Waste Disposal Project, as outlined in the project's work plan (Metro, 1981), was ". . . to evaluate {the} effectiveness in this local region (the Seattle area) of one or more disposal options in a pilot study." The study, within a short-term, low-budget planning project, was designed to test possible components of a regional plan before they became final recommendations. In order to develop a balanced and realistic recommendation, we needed to check general public opinion and actions to find out: 1) what average citizens think about the issue of household hazardous waste, 2) what they say they would be willing to do about it, and 3) if they would actually do what they said they would do. As the study progressed, we added one more question: 4) why they did or did not do what they said they would do.

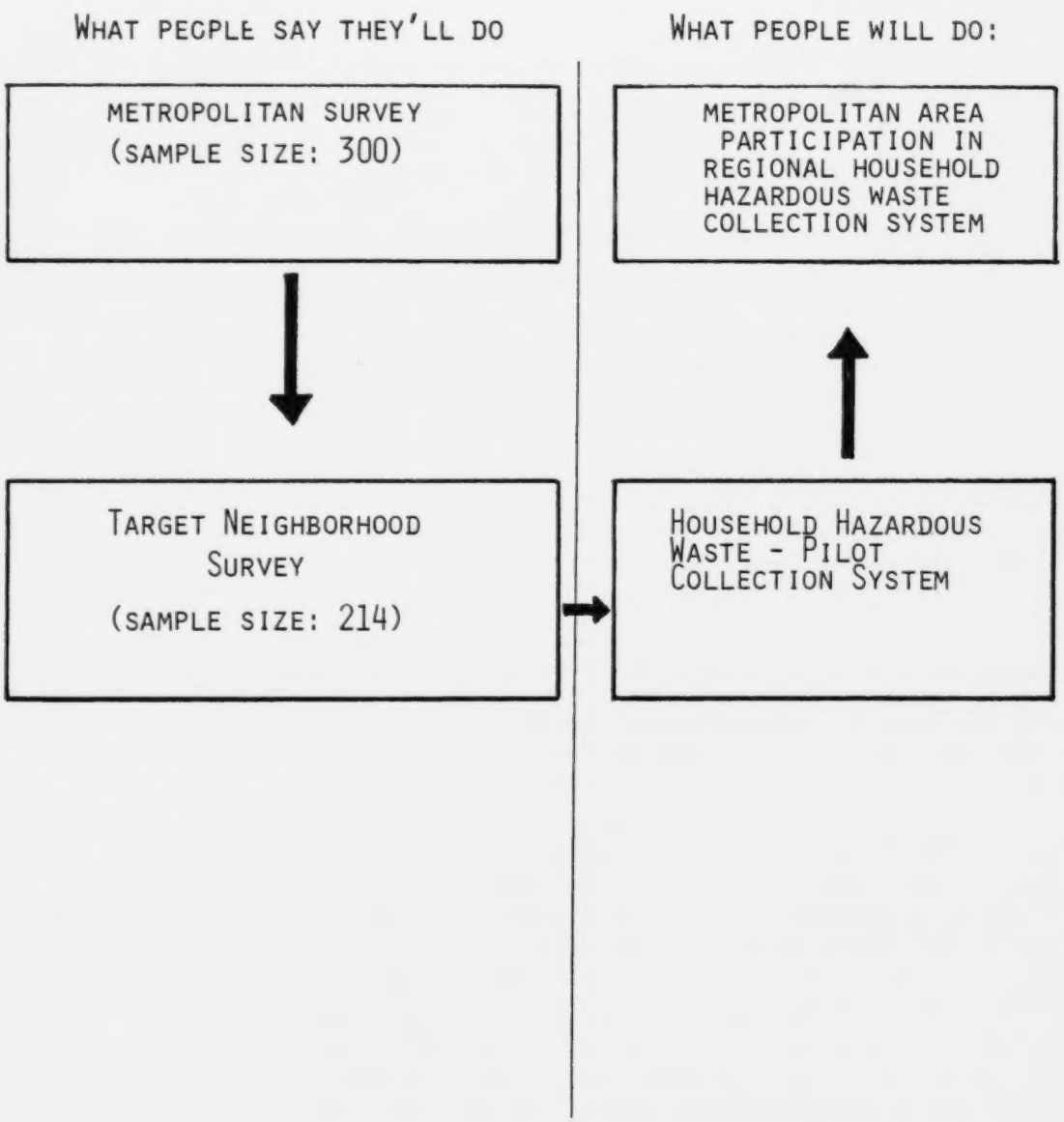
The Household Hazardous Waste Disposal Committee spent many months designing the pilot study to address these issues as efficiently as possible. Appendix A contains minutes of committee meetings and discussion summaries that present a good picture of the design-selection process, the wide range of initial options considered and the rationale for the final study design.

The Pilot Study. In order to run a test in a portion of the metropolitan area's total population, one or more representative neighborhoods had to be selected. Knowledge of the sample population's demographics and attitudes and how they compare with the metropolitan area's demographics and attitudes were critical to the success of the test. The pilot study design was based on the following assumption: if we know how opinions in the target neighborhood compare to the regional population, we will be able to extrapolate how the region will act, based upon the response of the target neighborhood to our test (see Figure 1).

After reviewing census tract information, the target neighborhood was selected based upon three criteria: 1) median income slightly above Seattle median, 2) median housing value slightly above Seattle median, and 3) homeowner occupancy 70% or greater. The committee used these criteria to select residents with slightly higher than average income levels who owned their homes, assuming they would be most likely to use pesticides, change their car oil, paint their houses, etc. The committee was consciously "stacking the deck" in favor of a higher participation rate. If this neighborhood didn't respond, other neighborhoods would be even less likely to participate.

Figure 1.

CONCEPT OF PILOT PROJECT DESIGN.


WHAT PEOPLE SAY THEY'LL DO
WHAT PEOPLE WILL DO:
METROPOLITAN SURVEY
(SAMPLE SIZE: 300)
METROPOLITAN AREA PARTICIPATION IN REGIONAL HOUSEHOLD HAZARDOUS WASTE COLLECTION SYSTEM
TARGET NEIGHBORHOOD SURVEY
(SAMPLE SIZE: 214)
HOUSEHOLD HAZARDOUS WASTE - PILOT COLLECTION SYSTEM

The pilot study was composed of three parts:

1. an initial or "before" survey that compared the neighborhood to the region on the three criteria discussed above, and on attitudes toward household wastes;
2. a short waste collection project in the study neighborhood; and
3. a follow-up or "after" survey to help evaluate and interpret the collection project results.

The initial survey was conducted by telephone using randomly-selected numbers in two distinct groups: 300 residents from the Seattle/King County area and 214 residents from the target neighborhood. Questions addressed basic demographic parameters, awareness of and attitudes about hazardous substances in consumer products, and willingness to participate in alternate disposal practices. Part II of this report presents more information about methods as well as results.

The waste collection project was conducted in February 1982, in the test neighborhood. Three types of wastes were collected--used motor oil, old or waste pesticides and waste solvents; the oil was collected at a number of service stations in the area and the pesticides and solvents at a local fire station. Details of the educational effort, collection protocols and results are presented in Part III of this report.

The follow-up survey, similar to the initial survey, was conducted only in the test neighborhood. Questions addressed awareness of the pilot study, reasons for participating or not participating and attitudes on future programs. Part IV presents information on this survey and its results.

II. INITIAL AWARENESS AND ATTITUDES SURVEY

The following report presents the objectives, methodology and results of the "before" survey conducted for the Household Hazardous Waste Disposal Project by Leonard Guss Associates, Inc., of Tacoma, WA, as reported to Metro by Leonard Guss and Judy Leraas of LGA.

The questionnaire used in the initial survey can be found in Appendix B.

Preceding page blank

HOUSEHOLD TOXICANTS - AWARENESS AND ATTITUDES

The Water Quality Planning Group of METRO has undertaken a project to identify, and reduce the quantity of, toxicants which is entering the ambient surface and groundwaters from private households. The Household Hazardous Waste Disposal Project seeks to explore alternatives for disposing of such toxicants in a way that is both effective in disposition and would be readily adopted by householders. The outcome of the project is to be a plan for identifying the nature and amounts of toxicants typically represented in metropolitan area households, and a means of disposal acceptable to area citizens.

An important part of the project is ascertaining the awareness of the issue of toxicity and the degree to which the average householder is concerned about having, and disposing of, such materials. These subjects are important, in that the householder is not likely to make an effort to identify and dispose of toxic and other hazardous materials if:

... he/she is not aware of the widespread distribution of potentially hazardous materials, or

... he/she does not agree that this is a matter of concern, or

... he/she is asked to undertake a disposal procedure which is viewed as unduly burdensome

Therefore, the HHWD commissioned a study to explore and elucidate these issues.

OBJECTIVES

... determine awareness level of toxic and hazardous substances generally, and the degree to which this is a matter of concern

... determine awareness of toxicants/hazardous materials often ordinarily available in the home or in household products

... identify the kinds and quantities of toxic/hazardous substances available for disposal

... identify attitudes on alternatives to the use of products containing toxicants in the home or garden areas

... review past and present means by which householders dispose of unwanted toxic or hazardous materials, and

... evaluate the acceptability of and willingness to participate in alternate disposal practices, including such options as:

(1) taking the materials to a designated site

(2) calling for disposal vehicle

(3) changing present behavior patterns

(4) paying a fee for disposal service

SCOPE

The scope of this study was restricted to the Municipality of Metropolitan Seattle.

METHODOLOGY

The method used was the telephone survey, using names chosen on a randomized basis from current area telephone directories. Other techniques were ruled out because they either require substantially more time (in the case of mail questionnaires) or funds (as would personal interviews) than were available for this study.

STUDY METHOD

1. LGA designed a questionnaire encompassing the topics of interest as specified in the objectives, as well as key demographic characteristics of use to the analysis. This questionnaire was reviewed by HHWD staff and the HHWD Committee, both of whom made comments and suggestions that were incorporated in the final design.

2. The study design called for telephone interviews to be conducted in (1) the broad metropolitan Seattle area, and (2) a compact area suitable for test

ing, at a later time, of alternative means of disposing toxic and hazardous household wastes. The compact area was to be reasonably representative of the Seattle area mix, somewhat skewed to the high side of such characteristics as single family housing, home ownership and higher income. Past studies have shown that single family dwellers are likely to have more of the kinds of materials designated as toxic than apartment dwellers, and that higher income persons are more prone to respond to concerns about toxic wastes. Therefore such a neighborhood would test the acceptability of a proposed waste disposal method in at least one direction, e.g., if it would not work in the test neighborhood, it is probable that it would not work elsewhere in the metropolitan area. LGA reviewed available census data on each of the census tracts in the City of Seattle, and identified each as to degree of single family dwellings, degree of home ownership, and family income. The parameters selected were as follows:

- median housing value of $25,000 and more, compared to the 1970 average of $21,624 for the Standard Metropolitan Statistical Area (SMSA)
- median family income of $12,000 and up, compared to the 1970 median of $11,037.
- homeowner occupancy of 70 percent or more, compared to the 1977 average for the SMSA of 65.7 percent.

Figure 1 shows the dispersion of the census tracts with these characteristics. After consideration of those census tracts which exhibited all three characteristics, the Consultant, in concert with HHWD, selected Census tracts 5 and 16, as the compact area.

3. LGA then drew samples for two surveys, each using the same survey instrument:

   (a) a survey of 300 residents drawn in a randomized manner from the metropolitan area. This allows a maximum sampling tolerance of 7 percent at the 50 percent level with a 95 percent confidence level.

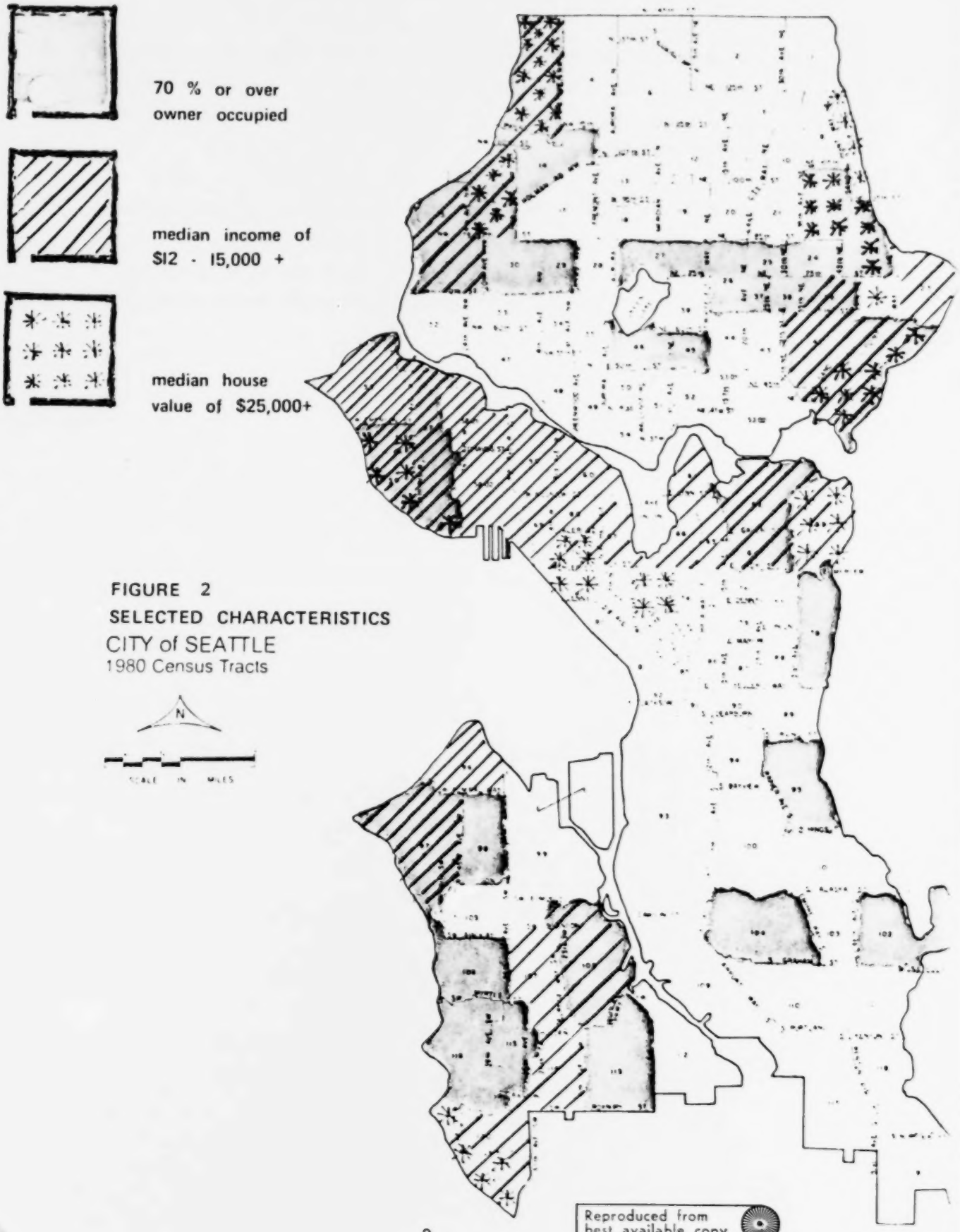


FIGURE 2
SELECTED CHARACTERISTICS
CITY of SEATTLE
1980 Census Tracts

Reproduced from
best available copy.

(b) a survey of 214 respondents drawn from the "target neighborhood" through the use of a reverse directory. This allows a maximum sampling tolerance of 9 percent at the 50 percent level with a 95 percent confidence level.

(4) LGA completed a total of 514 interviews, edited the completed forms to prepare them for data processing, and had the data analyzed using a computer program which provides easily readable, fully captioned tables and cross-tabulations. This is included as a separate Appendix to this report.

CHARACTERISTICS OF THE SAMPLE

Throughout this report the responses to questions are broken out by certain characteristics which distinguish the respondents from each other. Of special importance is the distinction between residents of the greater Seattle area and those living in the designated or "target neighborhood". The information which defines these categories was recorded at the end of each interview but is presented as a forward to the findings, in order to illustrate the nature of the sample from which the findings were obtained.

Table 1

PROFILE OF THE SAMPLE RESPONDENTS

TOTAL RESPONDENTS	TOTAL 514 %	CITY-WIDE 314 %	TARGET NEIGHBORHOOD 200 %
EDUCATION:			
Grade School	5	5	5
High School	20	20	19
Trade School	5	4	7
Some College	28	33	20
College-4 or More Years	41	38	47
No Answer	1	--	2
INCOME:			
Under $15,000	15	14	17
$15,000 - $25,000	19	21	16
$25,000 - $35,000	21	23	19
Over $35,000	27	25	31
No Answer	18	17	17
SEX:			
Male	44	45	41
Female	56	55	59
HOUSEHOLD SIZE:			
1 Member	13	13	13
2-3 Members	58	52	66
4 or More Members	28	35	19
No Answer	1	--	2
CHILDREN UNDER SIX:			
Yes	14	17	11
No	85	83	88
No Answer	1	--	1
RESIDENCE:			
Owned	81	77	87
Rented	19	23	12
No Answer	--	--	1

The sample has a good dispersion, in terms of demographic characteristics. About two-fifths are college graduates; about one-third of those who answered the income question earn over $35,000 per year; there is roughly an equal split between men and women; and about four-fifths live in homes which they own or are buying. There is also good representation of those in the lower portions of the economic strata. The "target neighborhood", although selected for its higher socioeconomic level generally, appears to be reasonably representative of the city as a whole. In comparing the characteristics of its residents to those of people living in the broader area, few major differences are seen. In both groups, slightly over two-thirds have had some college training, and about three-fifths of those reporting their income earn over $25,000. The "target neighborhood" is slightly more oriented to owned housing, and its families are somewhat smaller. However, on the whole, the parallels in the two samples are more striking than the differences.

Metro especially wished to know if the respondents change the oil and/or antifreeze in their automobiles themselves. The responses indicate that this practice is relatively common among the men in the sample and is also done by a significant number of women (assuming that they answered for themselves and not for their husbands).

Table 2

RESPONDENTS WHO CHANGE AUTOMOBILE OIL/ANTIFREEZE THEMSELVES

	TOTAL %	MALE %	FEMALE %	CITY-WIDE %	TARGET NEIGHBORHOOD %
Do not change oil/antifreeze	51	38	61	48	57
Change oil only	4	6	3	5	3
Change antifreeze only	3	3	3	2	4
Change both oil and antifreeze	42	53	33	45	36

The "target neighborhood", with its higher home ownership, smaller family size, and slightly higher income and education levels, is less disposed toward home automobile care. The difference between this area and the rest of the city, however, is relatively small.

FINDINGS

The telephone interviews began with a screening question to make contact with the (male or female) household head, and only people who identified themselves as such were asked to proceed with the interview. The interviewers were also instructed to balance their individual quotas so that no more than 60 percent of the completed interviews were with either sex. These procedures resulted in a sample consisting of 514 household heads, of whom 224 are men and 290 are women. A sample of this size has a maximum statistical error of 5 percent. That is, the chances are 95 in 100 that the percentage totals (in the overall sample) are accurate within a margin of plus or minus 5 percent. Of course, this proportion is larger among various segments of the sample, such as the "target neighborhood" or those within a certain income category.

I. IDENTIFICATION OF TOXIC SUBSTANCES

The first inquiry was an open-ended question which required the respondents to name the substances in their home which are believed to be toxic. It was phrased as follows: **"When you hear the term "toxic" what household products come to mind, other than drugs and pharmaceutical products?"** The responses reveal that the word "toxic" is most often associated with household cleaners. In terms of demographic groupings, it appears that educational level is the most relevant in the identification of toxic materials.

About three in four respondents named household cleaners as a toxic substance, and this recognition is strongest among the most well educated. Women were more likely to name these products than were men (77 percent vs. 66 percent), and those with large households were more likely to name them than were those living in smaller families. Household cleaners were named by more than five times the number of people naming any other single category of household products.

With regard to drain openers, the next most often recognized toxic substance, the major demographic differentiation concerns the presence of young children

Table 3

UNASSISTED IDENTIFICATION OF TOXIC HOUSEHOLD PRODUCTS

		EDUCATION LEVEL		
	TOTAL	HIGH SCHOOL OR LESS	TRADE SCHOOL	COLLEGE
	%	%	%	%
IDENTIFIED THESE PRODUCTS:				
Household Cleaners	72	62	68	76
Drain Openers	14	14	—	16
Paints or Paint Thinner	11	1	12	14
Pesticides	11	9	16	11
Herbicides/Weed Killers	5	1	--	8
Motor Oil or Antifreeze	5	2	8	5
Auto or Furniture Polish	5	4	4	5
Fertilizers	3	2	4	4
Wood Preservatives	1	--	--	--
Others Combined	22	24	12	22

in the home. Among those with children under six, 22 percent cited this product; among those with no young children it was named by only 13 percent. It was also named more often by home owners than by renters, presumably because those who own their residences are more likely to be familiar with the products. These patterns are also true with regard to the citing of paint and paint thinners.

There is a strong suggestion that day-to-day familiarity with certain household products tends to be related to knowledge of their toxicity. Women were more likely than men to mention household cleaners, drain openers, and polishes. Men were more likely to name paints or paint thinners and motor oil or antifreeze. Similarly, homeowners were more likely than renters to mention drain openers, paints or paint thinners, and herbicides or weed killers.

II. PRESENCE OF TOXIC SUBSTANCES IN RESIDENCES

As one part of the follow-up question, the respondents were asked to indicate if they presently have any of ten substances in their homes. The results of this question, shown in Table 4, indicate the totals for the "target neighborhood" and for the broader area.

Table 4

PROPORTION OF HOMES CONTAINING SELECTED TOXIC SUBSTANCES

	TOTAL	CITY-WIDE	TARGET NEIGHBORHOOD
	%	%	%
Household Cleaners	98	98	99
Auto or Furniture Polishes	80	80	80
Paints or Thinners	78	77	81
Motor Oil	59	60	59
Pesticides	56	55	59
Fertilizers	56	49	67
Chemical Drain Openers	55	54	58
Weed Killers	49	48	52
Antifreeze	41	38	45
Wood Preservatives	34	40	26

Virtually all of the residences contain household cleaners of one type or another. About four in five contain auto or furniture polishes and, in this case, homeowners are more likely to have it than are renters (82 percent vs. 73 percent). Paints and thinners are found considerably more often in the homes of upper income families than among those with lower incomes and are found more often in owned homes (86 percent) than in rental units (47 percent). The same is true with regard to the presence of motor oil and antifreeze.

There are major differences with regard to the presence of pesticides. They are found in 66 percent of the homes of those earning over $35,000, in 60 percent of the homes of the college educated, and in 63 percent of the owned homes. Con-

versely, they are found in only 44 percent of the homes of the lowest income group, in 46 percent of the homes of those with the least education, and in 30 percent of the rental units. Fertilizers, weed killers, and wood preservatives follow similar patterns...they are most likely to be present in the homes of the higher income, the better educated, and the non-renters.

There are only two household products which are present to a significantly different degree in the "target neighborhood" than in the city as a whole. This neighborhood's residents are less likely to have wood preservatives on hand and are more likely to have fertilizers. This may be related to a higher incidence of grounds and gardens in the more affluent target neighborhoods.

III. PERCEPTIONS OF TOXICITY

The respondents were asked to evaluate the hazards associated with each of these ten substances, by assigning a rating between one and five to each. The lowest ratings are associated with perceptions of low hazard, and the high ratings indicate perceptions of high hazard. In Table 5, the "4 and 5" ratings are combined, as are the "1 and 2" ratings.

The substance seen as most hazardous is chemical drain opener, followed by weed killers and pesticides. The only substances on the list which more people consider a "low hazard" than a "high hazard" are automobile or furniture polish, and motor oil. The general category of household cleaners is also viewed as relatively harmless.

Table 5 indicates that education level is not a good predictor of perceptions concerning the toxicity of household substances. The only product which is viewed with significantly more caution by the higher educated is antifreeze.

In all cases, families with young children (under six) tend to assign higher hazard ratings than do families not having young children. In most instances, about 20 percent more of these families assign high hazard ratings than among the families without young children. Another pattern appears almost universal; that is,

Table 5

PERCEPTIONS OF THE HAZARD ASSOCIATED WITH SELECTED TOXIC SUBSTANCES

		EDUCATION LEVEL		
	TOTAL	HIGH SCHOOL OR LESS	TRADE SCHOOL	COLLEGE
	%	%	%	%
CHEMICAL DRAIN OPENERS:				
High Hazard	84	83	88	85
Low Hazard	7	7	12	7
WEED KILLERS:				
High Hazard	81	83	80	80
Low Hazard	8	6	8	9
PESTICIDES:				
High Hazard	71	69	72	72
Low Hazard	11	10	16	11
PAINTS OR THINNERS:				
High Hazard	66	68	72	64
Low Hazard	16	14	16	16
WOOD PRESERVATIVES:				
High Hazard	58	58	76	58
Low Hazard	13	15	8	13
ANTIFREEZE:				
High Hazard	53	42	68	56
Low Hazard	21	25	12	21
FERTILIZERS:				
High Hazard	40	37	52	40
Low Hazard	32	30	28	33
HOUSEHOLD CLEANERS:				
High Hazard	34	35	28	35
Low Hazard	30	33	36	28
AUTO OR FURNITURE POLISHES:				
High Hazard	30	29	32	31
Low Hazard	39	45	36	38
MOTOR OIL:				
High Hazard	27	24	36	28
Low Hazard	46	52	40	44

women are considerably more likely to assign high hazard ratings to these products than are male respondents. These differences are illustrated in Table 6.

Table 6

PROPORTIONS OF SAMPLE SEGMENTS ASSIGNING "HIGH HAZARD" RATINGS

PRODUCT	YOUNG CHILDREN IN HOUSEHOLD		FEMALE	MALE
	YES	NO		
	%	%	%	%
Chemical Drain Openers	93	83	86	83
Weed Killers	89	79	81	80
Pesticides	90	68	75	67
Paints or Thinners	84	63	76	53
Wood Preservatives	73	56	62	54
Antifreeze	74	50	60	44
Fertilizers	64	36	48	31
Household Cleaners	52	31	42	23
Auto or Furniture Polishes	55	26	37	20
Motor Oil	40	25	37	14

IV. DISPOSAL OF TOXIC SUBSTANCES: CURRENT PRACTICES

As a lead-in to the inquiry regarding specific methods of disposal, the respondents were asked if they had disposed of any of these kinds of materials in the last year or so. Two-thirds said that they had not, indicating that either: (1) these products are kept on hand indefinitely, or (2) the products are entirely consumed in household uses and seldom disposed of.

Table 7

DISPOSAL OF ANY OF TEN SELECTED PRODUCTS DURING THE PAST YEAR OR SO

	TOTAL	MALE	FEMALE
	%	%	%
Have Disposed of These Products	28	33	24
Have Not Disposed of These Products	68	61	73
Don't Know/No Answer	4	6	3

Interestingly, the responses indicate that men are more likely to dispose of such products than are women. As suggested in the previous table, women tend to view the hazards of these products more seriously than men. It is also noteworthy that disposal differs by educational categories. Among the college educated, 31 percent have disposed of these materials, whereas only 20 percent of those with grade school or high school educations have done so.

Table 8 indicates the proportions of the sample which have disposed of each material and the ways in which this disposal was handled. Paints and thinners are the products most often disposed of (35 percent, overall), followed by motor oil (33 percent), household cleaners (19 percent), and chemical drain openers (18 percent). The city-wide population and the "target neighborhood" do not differ meaningfully in this respect.

The most popular disposal method, for all products combined, is the throwing of material in the trash or garbage; this accounted for 56 percent of all disposal. Disposing of materials in the sewer ranked next, at 18 percent, followed by throwing material on or in the ground (16 percent) and use of special sites (14 percent).

Because the numbers of sample members disposing of each product are small, the data regarding disposal methods cannot be considered statistically reliable, but they do suggest overall patterns. For paints and thinners, which are disposed of relatively often, the majority throw this material in the trash. For motor oils, roughly half use the trash and about one-fourth pour it on or into the ground. For household cleaners, about half use the sewers and one-third use the trash. For drain openers, about half use the trash and one-third use the sewers.

Table 8

DISPOSAL METHODS FOR EACH OF TEN TOXIC HOUSEHOLD PRODUCTS

	PESTICIDES	HOUSEHOLD CLEANERS	MOTOR OIL	ANTI-FREEZE	PAINTS/ THINNER	WOOD PRES.	WEED KILLERS	FERTI-LIZERS	POLI-SHES	DRAIN OPENERS
PROPORTION OF CITY-WIDE SAMPLE DISPOSING OF EACH	11%	17%	36%	6%	33%	--	6%	3%	2%	17%
PROPORTION OF TARGET NEIGH-BORHOOD DISPOSING OF EACH	10%	23%	29%	2%	37%	4%	12%	6%	--	19%
METHOD OF DISPOSAL (IN NUMBERS OF HOUSEHOLDS):										
Throw In Trash	10	9	22	2	30	1	6	3	1	12
Throw In/On Ground	2	--	12	1	8	1	3	1	--	--
Take To A Special Dis-posal Place Or Center	1	--	8	2	9	--	1	1	1	1
Down Sewer	1	15	2	1	2	--	--	--	--	9
Down Toilet	--	4	--	--	1	--	--	1	--	1
Burned	--	--	--	--	--	--	--	--	--	1

V. ATTITUDES ABOUT DISPOSAL OF TOXIC PRODUCTS

A key question in this survey was phrased as follows: "How important to you is the question of disposing of toxic or hazardous substances currently found in your residence? Please rate your feelings on a scale of 1 to 5, with five being "very concerned" and 1 being "not at all concerned". The responses indicate that this issue is one about which most Seattle residents are concerned.

Table 9

PERCEIVED IMPORTANCE OF TOXIC SUBSTANCE DISPOSAL

	TOTAL %	CITY-WIDE %	TARGET NEIGHBORHOOD %
RATING OF IMPORTANCE:			
Not Concerned ...1	8	7	11
...2	7	6	7
...3	20	22	17
...4	20	21	19
Very Concerned ...5	45	45	46

Combining the response categories, it appears that about one in seven respondents have little concern for disposal, and about two-thirds feel that it is an important issue. One in five have neutral feelings on the subject. There is very little difference between the city-wide sample and the "target neighborhood".

Women indicate more concern than men. While 70 percent of the females voiced high concern, only 59 percent of the men give the matter this degree of importance. Renters show more concern than owners, by a ratio of 71 percent to 64 percent. Families with young children have slightly more concern that those without young children, by a ratio of 70 percent to 64 percent. It is also clear that the lowest income group (under $15,000) has considerably more concern than the highest group (over $35,000), by a ratio of 73 percent to 58 percent.

However, it should be noted that the research itself, that is, the asking of the questions, could have prompted the expression of concern to some degree, and that actual concern levels may be somewhat, but probably not far, below those expressed.

VI. ATTITUDES ABOUT THE REDUCTION OF DISPOSAL PROBLEMS

The remainder of the substantive questions concerned residents' attitudes about ways in which the disposal of toxic household products could be handled, for the greater safety of family members and others. Most of these questions were phrased in a "what if..." manner, with respondents providing an opinion or indication of likely behavior in the future.

A. Smaller Purchases

The respondents were asked the following: **"Would you be willing to buy smaller quantities of toxic and hazardous materials in order to help reduce disposal problems, even if it cost more?"** A two-thirds majority replied affirmatively to this suggestion.

Table 10

PERCEIVED WILLINGNESS TO BUY SMALLER QUANTITIES OF TOXIC SUBSTANCES

				CONCERN ABOUT DISPOSAL		
	TOTAL	MALE	FEMALE	HIGH	NEUTRAL	LOW
	%	%	%	%	%	%
Yes	68	62	72	72	66	50
No	21	27	17	16	26	37
Don't Know/No Answer	11	11	11	12	8	13

In addition to the greater willingness of women and those most concerned about disposal (as shown in Table 10), both renters and the heads of smaller families are more willing to buy smaller quantities than are their opposites. This finding has particular logic because of these people's lower levels of consumption.

B. Alternative Products

Another question asked respondents was if they ... **"would be willing to buy alternative products to those toxic ones you currently use, if the alternatives were less toxic but still effective."** The support for this suggestion was very strong.

Table 11

PERCEIVED WILLINGNESS TO BUY ALTERNATIVE, NON-TOXIC PRODUCTS

				CONCERN ABOUT DISPOSAL		
	TOTAL	MALE	FEMALE	HIGH	NEUTRAL	LOW
	%	%	%	%	%	%
Yes	91	88	93	92	92	84
No	4	6	2	3	2	11
Maybe	4	5	3	3	4	5
Don't Know	1	1	2	2	2	--

The stated willingness to switch to non-toxic products is so high that comparisons within the sample provide no meaningful differences. Only 19 persons in the sample replied with a "maybe" to this question, and most of those who offered further explanation said either that the product would have to be just as effective as the toxic one or that it would have to cost the same or less.

C. Waste Disposal Centers

Support was also indicated for the suggestions that respondents take these substances to a special location for disposal. The question was phrased: **"If there were a way to dispose of toxic products into a nearby community waste disposal center or similar spot, would you make an effort to do this?"**

Table 12

PERCEIVED WILLINGNESS TO USE A WASTE DISPOSAL CENTER

	TOTAL	MALE	FEMALE	CONCERN ABOUT DISPOSAL HIGH	NEUTRAL	LOW
	%	%	%	%	%	%
Yes	88	88	87	91	83	79
No	9	10	9	6	12	18
Don't Know/No Answer	3	2	4	3	5	3

Nearly nine out of ten respondents say that they would take their toxic products to a nearby disposal site. This proportion does not differ meaningfully by demographic or locational designations.

D. Likelihood of Using Proposed Disposal Services

The respondents were told that Metro is considering four different disposal options for toxic and hazardous substances, and they were asked how likely it is that they would use each of these services. In all cases except those calling for user fees, at least a two-thirds majority say that they would definitely use the service. The percentages cited in Table 12 are based upon the 450 persons who said "yes" to the previous question...that they would be willing to make an effort to use a disposal center.

Table 13

LIKELIHOOD OF RESIDENTS USING PROPOSED DISPOSAL SERVICES

	TOTAL WILLING TO USE A DISPOSAL CENTER %
A PERMANENT NEIGHBORHOOD COLLECTION SITE FOR FREE DISPOSAL OF OTHER TOXIC AND HAZARDOUS WASTES	
Would Use	81
Might Use	10
Would Not Use	8
No Answer	1
A NEIGHBORHOOD "DUMP DAY" WHERE ALL HAZARDOUS WASTES WOULD BE COLLECTED AT NEIGHBORHOOD SITES AND TAKEN AWAY	
Would Use	77
Might Use	15
Would Not Use	7
No Answer	1
A FREE SERVICE THAT WOULD COME TO PEOPLE'S HOMES TO COLLECT TOXIC OR HAZARDOUS WASTES	
Would Use	67
Might Use	9
Would Not Use	24
A NEIGHBORHOOD OIL RECYCLING COLLECTION SITE, WHERE PEOPLE COULD DISPOSE OF USED MOTOR OIL	
Would Use	66
Might Use	8
Would Not Use	25
No Answer	1
...A SIMILAR SITE THAT CITIZENS HAD TO PAY TO USE	
Would Use	40
Might Use	33
Would Not Use	25
No Answer	2
...A PICK UP SERVICE THAT CHARGED A FEE	
Would Use	31
Might Use	27
Would Not Use	41
No Answer	1

Among the four services (six, including the fee options), the most popular would be the permanent catch-all neighborhood collection site, followed by the neighborhood "Dump Day" option. In both cases, about four in five respondents say that they definitely would use the service, and fewer than one in ten say that they would not.

There are a few differences in the responses of city-wide residents and those in the "target neighborhood". The latter group are less predisposed than the city-wide group toward all of the options. Among this group, the "Dump Day" proposal and the neighborhood collection site rank about equally (76 percent and 75 percent probable use), and the oil recycling center and collection service proposals are ranked considerably below these, at 58 percent and 60 percent probable use, respectively.

There are also some interesting male/female differences in these data. Women are considerably more favorable than men to the "Dump Day" and collection service proposals. Men are more inclined than women to the oil recycling centers and neighborhood collection sites.

Owners and renters generally feel similarly about the proposals, with the exception of the "Dump Day" service. Among the homeowners, 79 percent favor this option, versus only 67 percent among the renters.

CONCLUSIONS

1. About half the total sample (62 percent of the men, 39 percent of the women), changed their own oil, or antifreeze, or both. This enhances the importance of the finding that, in about a fourth of the cases, old oil and antifreeze are disposed of on land or in sewers.

2. On an unaided recall basis, most (72 percent) respondents identify household cleaners as a toxic substance. The next highest recall is a distant second: drain openers cited by 14 percent of the sample. Everbody has household cleaners but, despite their being considered a hazard, they are not considered as highly so. They rank eighth in hazard of a list of ten; 34 percent of the sample feel they are hazardous, but only 19 percent believe they are very hazardous.

3. The toxic substances studied are commonplace in the home. Seven of the ten are found in more than half the homes in the sample. Wood preservatives are found to the least extent, in about a third of the respondents' homes.

4. The highest ratings for hazard were clearly given to chemical drain openers, weed killers, and pesticides. In each case about half the households (not necessarily the same half) hold stocks of these substances. Far fewer persons could associate motor oil, polishes, or household cleaners with high hazard.

5. Two subgroups of the sample are significantly more concerned with toxic substances in the home than others: women, and respondents with young children, under six, in the home. These two groups are related, of course. However, the concerns expressed about these hazardous materials are more directed to their presence in the home than to the effects of the disposal upon the environment.

6. Only a relatively small proportion of the sample, 28 percent, has actually disposed of any of these products. More men than women have done so, perhaps because taking out the trash is more of a male-oriented chore. Either small supplies of these materials are kept indefinitely (likely for such items as paints, although old paints, of colors no longer wanted, are also most frequently thrown away), or are consumed entirely and the packages disposed of (likely for most of the rest of the items). Motor oil is also disposed of, by a third of the group.

7. The usual method is to throw the product in the trash or garbage, followed by the sewer, the ground and special disposal sites. Paints and motor oil are poured on the ground more than other materials, and are also more frequently taken to special disposal sites - but in each case the number of actual experiences is very small.

8. Citizens at large express concern about the effects of disposing of toxic wastes; significantly more women than men share this concern, as do the lowest income groups and, to a slight extent, families with children under six. All told, two-thirds of the respondents expressed some, or a high degree of concern.

9. Insofar as responses to the telephone interviews are able to indicate, respondents are willing to implement their concerns:

   ... 68 percent would buy smaller units, to reduce the inventory of hazardous material in the home

   ... 91 percent would switch to an alternative that was less toxic, if it still did the job effectively. Only a very few (under four percent) conditioned their willingness on cost or proven equivalent effectiveness.

   ... 88 percent say they would use, or try to use, a nearby waste disposal site in their community

10. Finally, respondents were given a choice of six different options concerning disposition of toxic and hazardous wastes, as defined in the study. The

most popular is a permanent neighborhood collection site for free disposal. Special dump days are less popular, as are services that come to the home, even if free. Imposition of any charge drops acceptance of the idea to a low figure; more affluent respondents are more willing - but still not greatly willing - to pay a fee. A site for collecting oil for recycling would be used by two-thirds of the respondents - presumably only those who do, or would, change their own oil.

In summary, LGA concludes that the presence of household toxicants and hazardous materials is widespread, but that, for the most part, such materials are consumed completely, and only empty packages are disposed of. Still, about 28 percent of the sample has disposed of at least one such product in the past year, probably paint, motor oil, drain opener or household cleaner.

The subject is considered important, and of concern to the citizenry, who would make some effort to provide for proper disposition of these materials. The preference is for a convenient, permanent site. However, most persons would have relatively infrequent call for such a service.

The implications of these findings seem clear.

... massive educational programs seem unwarranted. People already recognize some degree of hazard.

... actions to encourage people to buy packages suited to immediate or short-term consumption seem warranted. Perhaps signage at points of purchase (with merchants' cooperation) would work.

... actions to encourage oil recycling seem useful. Again, signage at points of sale would be useful reminders. Perhaps the free provision of a convenient package (plastic bags, bag in a box) to catch old oil as it is drained would encourage recycling.

... publishing a list of non-toxic or less toxic alternatives would also be useful and acceptable to the public.

III. NEIGHBORHOOD COLLECTION PROJECT

The hazardous waste collection project of the Pilot Study was designed as a simple action/no action test in the selected neighborhood. If provided with information about household hazardous wastes and a reasonably convenient collection/disposal site, how many people out of a defined test population would respond? As presented in Part II, 88 percent of the people questioned in the initial survey said that they would "make an effort" to dispose of toxic products into a nearby community waste disposal center. Of those 88%, 81% said they would use a "permanent neighborhood collection site," 77% would use a "neighborhood 'dump day,'" 67% would use a "free service that would come to people's homes," and 66% would use a "neighborhood oil recycling collection site."

A. Design. A neighborhood of 4,000 households was blanketed with information about household hazardous wastes and given the opportunity to dispose of used motor oil, pesticides and solvents safely and conveniently during a three-week period. Automotive wastes (oil, brake and transmission fluids) were accepted at six local service stations. Waste pesticides and solvents were accepted at Fire Station No. 24 (at the corner of N. 130th Street and Phinney Avenue N., at the edge of the study area) seven days a week. Arrangements were made to identify, catalogue, pack in barrels and dispose of all wastes that were brought in during the short test period. The informational packet also provided an option to have wastes picked up at home by calling Metro.

B. Information Transfer. All 4,000 households in the test area -- portions of the Blue Ridge, Crown Hill, and Broadview neighborhoods (Census Tracts 5 and 16) -- were notified of the project by a flyer and brochure delivered to their front doors. Figure 3 is a slightly-reduced version of the flyer and Figure 4 is a copy of the "Toxic Substances in Your Home" brochure. This distribution technique -- provided by Northwest Advertising, Inc., at a cost of about $680 for the 4,000 households -- was aimed at insuring that everyone in the test area was given the opportunity to learn about the project. In addition to the door-to-door flyers, tne information campaign included tne following elements:

- Posters of the same design as the flyers were displayed at area commercial outlets (e.g., Art's Supermarket, 7-11 stores, Swanson's Nursery), schools, churches, and the branch library.

Preceding page blank

Figure 3. FLYER.

WANTED

★ TOXICANTS ★

Toss Your Toxics — With Care!

If you have ever changed the oil in your car, used pesticides on your lawn, painted a room, or cleaned a spot on a rug, you've handled toxic substances. And if you've ever wanted to dispose of these substances, you've had to deal with the problem of hazardous waste — household hazardous waste. As the protector of regional water quality, Metro would like to prevent hazardous wastes from entering area waters. One way to protect area waters is to collect waste toxic household products and dispose of the material at a secure hazardous waste landfill. Metro is testing this option in a pilot study in your neighborhood. We urge all residents to participate — let's toss our toxics with care!

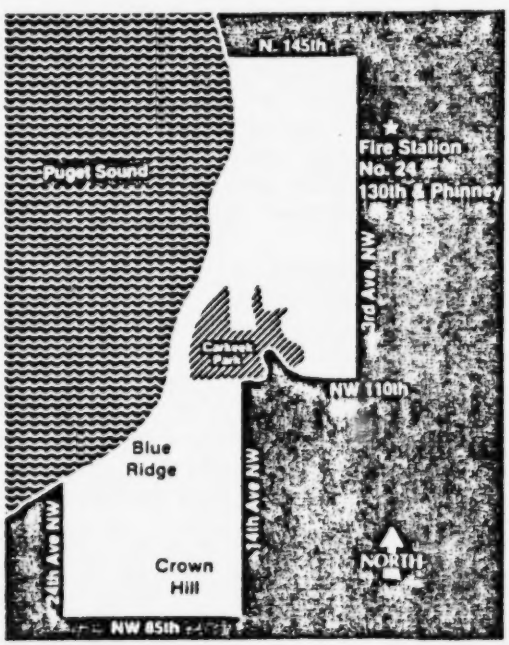
Who: All residents of the Blue Ridge/Crown Hill/ Broadview area (see map).

What: Old or waste **Pesticides** — either banned pesticides (such as DDT, chlordane or arsenic), indoor products (like ant and roach killer), lawn or garden pesticides (slug bait, weed & feed), or wood preservatives (woodlife, creosote).
Waste Solvents — paint thinners, furniture strippers, dry cleaning fluids, turpentine, etc.
Used Automotive Products — oil, brake and transmission fluid.

We will not take paint, household cleaners, antifreeze, any explosives or miscellaneous trash.

When: February 7-28 (3 weeks)
8:00 - 6:00 weekends and Holidays (President's Day)
2:00 - 7:00 during week

Where: Dispose of pesticides and solvents at Fire Station No. 24, at corner of 130th & Phinney (see map)



Recycle automotive oil at any of the following service stations:

Texaco: Greenwood and NW 125th
Texaco — 85th and 17th NW
Union 76 — 85th & 15th NW
Ray's Chevron — Greenwood & 105th
Holman Road Exxon — 9th & Holman Rd.
Tex Salmons Chevron — NW 85th & 3rd Ave NW

Or call 447-4818, and we will have trained personnel come to your home to pick up the toxic products.

Cost: This service is free of charge, but only available for this 3 week time period.

Questions about disposal of other toxic products? Call Metro at 447-4818.

Figure 4. BROCHURE.

Toxic Substances In Your Home

METRO

Water Quality Protection through proper handling of home and garden products

Municipality of Metropolitan Seattle

Figure 4. (continued)

The Problem

Many household, car and garden products are harmful if used or disposed of improperly. They contain chemicals which are toxic (poisonous) and/or caustic (causing burns) to people, plants and animals.

Under the Federal Clean Water Act of 1977, more than 100 of these toxic substances, or **toxicants,** commonly used by industry, commercial businesses and households, have been listed as "priority pollutants." Toxicants are usually poisonous in small quantities and can often accumulate in the environment. It is the continuous release of small amounts of toxic substances that can with time create a **big** problem.

Metro is studying toxicants in the sewage treatment system and local waters to define problem areas and effective control methods. At this point in our studies, three things are clear:

1. The cost of sewage treatment can increase dramatically if toxicants are in high concentrations in the waste stream;
2. Many toxicants get into our waters from sources outside the sewerage system;
3. The cost of cleaning up our waters once polluted with these toxicants would be astronomical.

Therefore, **control must begin at the source.** Your help is needed to keep toxic substances out of our streams, lakes and Puget Sound. It is up to all of us to keep our waters clean and safe.

Figure 4. (continued)

Water Pollution Cycle

Toxic chemicals enter our waters in many ways:

- air pollutants such as lead from gasoline return to us in rain and surface runoff;
- spilled oil and grease, pesticides, fertilizers and other products wash off yards and gardens into storm drains and streams;
- chemicals in trash disposed in improperly designed or managed landfills seep out into groundwater and other nearby waterways.

Figure 4. (continued)

General Tips

Use

- Be aware of the uses and dangers of products. If directions are unclear, contact the manufacturer or dealer before using.
- Keep unused products in their original containers for directions to follow and a list of contents for reference in the case of accidental poisonings. Store in a safe place.
- Do not overuse a product; twice as much does not mean twice the results. Follow directions.
- Never mix different products; explosive or poisonous chemical reactions may occur.
- Buy only what you need. If you don't buy an excess, you won't have to get rid of it.

Disposal

- Never dispose of products containing harmful chemicals down the drain unless you know they can be treated. Many toxic substances disturb septic tanks or pass right through the treatment systems into the Duwamish River or Puget Sound. If you are unsure, call Metro at 447-5885.
- For proper disposal of certain toxic substances (particularly hazardous pesticides), contact the Seattle-King County Health Department (625-2125). They will take some toxic products and answer questions on proper disposal.
- Take excess amounts of products containing toxicants to chemical reprocessing companies, such as Chemical Processors Inc. in Seattle (767-0350).
- Find a friend, neighbor or business (e.g. nursery) who can use up excess products instead of having to throw them away.

Figure 4. (continued)

Automotive Wastes

Oil

Examples of toxicants in waste oil: petroleum hydrocarbons and heavy metals like lead and zinc.

Toxic effects: Waste oil is toxic to people, fish and wildlife.

Special warnings and precautions: Dumping waste oil into the sewers, storm drains or any body of water is illegal.

Disposal:

- Drain waste oil into a container with a tight-fitting lid, and take it to a local service station to be recycled.
- Call the recycle hotline (1-800-RECYCLE) for directions to the station nearest you.

Antifreeze

Example of toxicant in antifreeze: ethylene glycol.

Toxic effects: Antifreeze is poisonous to people, fish and wildlife. Many pets die after they drink from sweet tasting puddles of antifreeze on driveways and sidewalks.

Disposal:

- Do not dump or wash antifreeze into street drains. Most of these drains connect directly to nearby lakes and streams.
- If possible, pour antifreeze onto a porous surface, like gravel, away from water.
- Do not pour antifreeze down the drain into a septic tank system. If on the regional sewerage system, you should only dispose of used antifreeze down the drain as a last resort.

Figure 4. (continued)

Pesticides and Herbicides

Examples of products in this category: rat poison, slug bait, malathion, parathion, weed & feed, 2,4-D.

Toxic effects: All pesticides are designed to kill or inhibit specific plants and animals; they are also poisonous to people, pets, and wildlife.

Special warnings and precautions: The following pesticides are now banned from sale or severely restricted in use. Do not use these products! See disposal options under General Tips.

DDT	**DBCP**	**Mirex**
Aldrin	**Heptachlor**	**Silvex**
Dieldrin	**Lindane**	**2,4,5-T**
Chlordane	**Kepone**	**Toxaphene**

Use:

- Consider alternatives to pesticide use whenever possible. Call Dial Extension (344-7984) for more information.
- After use, be careful not to over-water. The pesticide or fertilizer can run off with the excess water into a nearby stream or storm drain.

Disposal:

- All pesticides and herbicides are toxic to some degree. They should never be dumped into sewers, storm drains or septic tanks. Follow General Tips.

Figure 4. (continued)

Paint Products and Preservatives

Examples of products in this category: paints, lacquers, paint thinners and strippers, brush cleaners, wood preservatives and turpentine.

Examples of toxicants in these products: toluene, lead (in old paint), methylchloride, pentachlorophenol, trichloroethane.

Toxic effects: Many of these toxic substances are suspected carcinogens, poisonous to people and animals, or capable of accumulating to toxic levels in the environment.

Disposal:

- Solvents, paint thinners and wood preservatives, in particular, should not be dumped in the sewer system. Follow General Tips.
- Let used turpentine or brush cleaner sit in a closed jar until paint particles settle out. Then strain and reuse; wrap the waste material and discard in the trash.

Cleaners

Examples of products in this category: deodorizers, car cleaners, polishes, spot removers and many household cleaners.

Examples of toxicants in these products: lye, petroleum distillates, naphthas, trichloroethane, phenols, dichlorobenzene.

Toxic effects: Many of these are immediately poisonous to or accumulate to toxic levels in people, fish and wildlife.

Use:

- Consider the use of non-toxic products as alternatives:

1. For clogged drains: boiling water, "snaking" with a metal line and/or using a plunger;
2. For general cleaning: baking soda;

- Use biodegradable and low phosphate products when possible.

Figure 4. (continued)

For more information and help you can contact:

Metro - Toxicant Control Planning Section - 447-5885
Information on toxic substances and disposal

Seattle/King Co. Health Dept. - Environmental Health - 625-2125
Information and referral on toxic substances and disposal

Recycle Hotline - 1-800-RECYCLE (732-9253)
Information on recycling, locations that will accept reusable wastes

Chemical Processors Inc. - 767-0350
Location to dispose of toxic substances

King County Cooperative Extension Service - 344-7984
Recorded information ("Dial Extension") on garden products, etc

Poison Control Center - 634-5252
Accidental poisonings

Washington State Department of Ecology - 885-1900
Water pollution violations and disposal information

U.S. Coast Guard - 1-800-424-8802
Oil or chemical spills in water

U.S. Environmental Protection Agency
Public information - 442-1205
Publications and information on pesticides, other toxic substances and environmental laws

Prepared by the Toxicant Control Planning Section, Municipality of Metropolitan Seattle, and the Toxicant Task Force of the Citizens' Water Quality Advisory Committee.

This brochure has been financed in part by the U.S. Environmental Protection Agency and printed in cooperation with the Washington State Department of Ecology. Contents do not necessarily reflect the views and policies of EPA or DOE nor does mention of trade names or commercial products constitute endorsement or recommendation.

- additional flyers were left at all of the poster locations.
- notices were published in the Blue Ridge Community Council and Viewlands PTA newsletter.
- Presentations & flyers were given to about 300 children at Viewlands, North Beach, and Broadview/Thompson Elementary Schools.

The decision was made in the initial project design to not use mass media as a communication tool because television, radio and newspaper coverage would extend far beyond the boundaries of our test neighborhood. After assessment of the low participation rate during the first half of the project period, however, we decided to go ahead with media coverage to reinforce information transfer in the study area. Information on the collection site and related details was not included in order to avoid non-neighborhood participation in the test. Television, radio and newspaper coverage resulted from our efforts. Figure 5 shows an editorial that appeared in the Seattle Times. Figure 6 presents the Metro news release.

In spite of the attempts to insure information transfer to the test population, the follow-up survey (see Part IV) revealed that less than half (45%) of the people in the study area said they were aware that the project had occurred . The surveyor (LGA), however, indicates that a 45% awareness for this type of a project is quite good.

C. Collection Procedure. The Seattle Fire Department agreed to allow the pesticide and solvent collection site to be located at Fire Station No. 24, which was convenient to the study area, had secure space and facilities for our needs, and was ideal because of the Fire Department's reputation as a safe and reliable locus for handling hazardous substances.

Because Fire Department personnel had to be available at all times for emergency response and inspections, a chemist was hired to staff the collection site during the week; weekend and off- hour times were staffed by the project coordinator, the project manager, and a volunteer committee member.

Six 55-gallon drums were purchased to pack the wastes into. They were eventually shipped to the hazardous waste disposal site in Arlington, Oregon, operated by Chem-Security Systems, Inc.. The open-head (No. 17H) barrels, approved by the U.S. Department of Transportation, were fitted with multi-seal gaskets and bolt-closed covers for safe shipping. Hinged closures that could be padlocked were also obtained for access and security during the collection period. Dry absorbent material (e.g., Quick-Sorb® or Kitty Litter®) was packed around the containers of waste in the drums.

Figure 5. SEATTLE TIMES ARTICLE.

Seattle Times 2/19/82 (Editorial Page)

Is every household a miniature Love Canal?

ANOTHER rainy weekend ahead: A perfect time for those unpleasant chores you've been postponing — changing the oil in the car, cleaning the paintbrushes you left soaking in thinner, and maybe getting rid of those old containers of pesticides in the garage.

JOHN HAMER

Times editorial writer

What'll you do with the gunk? Well, you can pour the motor oil down the storm-sewer drain, flush the paint thinner down the toilet, and throw the pesticides in the garbage can. These are such small quantities, they can't do any harm, right?

Wrong. Remember, you're not the only one disposing of such stuff this weekend. There are thousands — maybe millions — more like you. Not knowing what to do with messy, smelly, possibly hazardous household wastes, you do the easiest thing possible: Down the drain or into the trash.

The problem is, this stuff has to go somewhere. Chances are it will end up — after going through a sewage-treatment plant or leaching out of a landfill — in local groundwater, rivers, lakes or Puget Sound.

Common household products — including lawn or garden pesticides and herbicides, fertilizers, cleaning fluids, paint thinners, furniture strippers, varnishes, wood preservatives, and used automotive products such as oil, brake or transmission fluid, and antifreeze — are gradually being recognized as a major source of pollution. When the chemicals in these materials, which are not biodegradable, get into the water or ground, they can harm plants, animals, and eventually humans.

If Metro's "Household Hazardous Waste Disposal" project succeeds, citizens soon may have a safer way to dispose of toxic substances. Metro is in the midst of an unprecedented program, the first of its kind in the country, to study toxicants in the metropolitan area — where they come from, where they go, what harm they do, and how they should be handled.

The industrial waste-disposal problem has drawn a lot of attention. But is every household a miniature Love Canal?

"It's a larger problem than most people think," says Joseph Simmler, Metro's supervisor of toxicant-control planning. "We have a diversity of materials used in relatively small quantities. In terms of actually distributing products into the environment, we have to take a very close look at the residential sector."

Last month Metro conducted a public survey on household toxicants. More than 500 telephone interviews were done with Seattle-area residents. At least 85 percent of those surveyed expressed some degree of concern about the problem, with 45 percent "very concerned."

When asked to identify the most common disposal methods

Metro

for these toxicants, most people mentioned throwing them in the garbage, dumping them on the ground, or pouring them down a storm drain. When asked what they'd do to help solve the problem, 88 percent said they would use a neighborhood waste-disposal center — either a permanent collection site or a "dump day" for toxicants.

To find out if people are willing to do what they say they'll do, Metro is conducting an almost month-long pilot project. Residents of three neighborhoods — Broadview, Blue Ridge and Crown Hill — are being asked to turn in any unwanted toxicants at a North End fire station. Old motor oil may be taken to one of six North End service stations for eventual recycling.

Susan Ridgley, who is helping coordinate the project for Metro, was at the site one recent weekday evening. When citizens bring in a hazardous waste, they fill out a short questionnaire, then deposit the waste in one of six 55-gallon metal drums filled with cat litter. (When the pilot project ends, the drums will be taken to the Chemical Processors, Inc., plant in the South End for later shipment by the Amalgamated Transfer Co. to the Arlington, Ore., waste-disposal site. Commendably, all the private companies involved in this project are donating their services without charge.)

"It's been a dribble so far," Ridgley says, noting that only the pesticides barrel was filling up. "It's a slimy problem. We've been looking at this issue for a year now, and we simply do not know where this stuff goes or what it does to the environment when it gets there.

"Unlike industrial sources, she points out, "you can't say, 'See that dead fish. This guy killed it.' But household wastes are beginning to be seen as a real problem." As industrial wastes are controlled, Ridgley predicts, household products may be the biggest source of toxicants in the future.

Something to think about as you do your weekend chores.

METRO NEWS

A news release from the Municipality of Metropolitan Seattle

Figure 6.
METRO NEWS RELEASE.

FOR IMMEDIATE RELEASE
Feb. 24, 1982
FOR FURTHER INFORMATION:
Gary Larson -- (206) 447-6767
Recorded Newsphone -- (206) 447-6333

METRO STUDYING METHODS FOR DISPOSING OF HOUSEHOLD TOXIC WASTES

Metro is nearing the end of a month-long study to identify the hazardous products used in Seattle-area households and determine the willingness of citizens to dispose of them properly.

Results from the study will help Metro planners evaluate residential sources of toxicants and develop a residential toxicant control program for all of King County.

"This information will help Metro identify ways to control toxic wastes that enter area waters and the wastewater-collection system," said Dr. Joe Simmler, project manager of Metro's toxicant programs. "Possible methods include consumer education programs and a regional network of collection centers."

Simmler explained that when toxic materials get into the water or ground they can harm plants, animals and eventually humans.

-more-

METRO
821 Second Avenue, Seattle, WA 98104

Figure 6. (continued)

TOXIC WASTES/Feb. 24, 1982/2-2-2-2

To begin the study, a consultant conducted telephone interviews with 514 homeowners: 300 in greater Seattle and 214 in the target neighborhoods of Blue Ridge, Crown Hill and Broadview in northwest Seattle.

Respondents completed a 10-minute questionnaire on their perception, use and disposal of toxic household products. Key results include:

--About two-thirds of those surveyed expressed some or great concern regarding toxic products and hazardous-waste disposal.

--The most common methods of toxic-waste disposal listed by respondents were throwing material in the garbage, on the ground or down a storm drain.

--A high percentage of respondents said they would use a nearby waste-disposal site if available.

"The telephone survey provided valuable information about what people said they would do regarding toxic-waste disposal," Simmler said. "A three-week pilot study in the target neighborhoods was designed to find out what people actually would do if given the proper information and opportunity."

Flyers explaining the hazardous waste pilot project, which began Feb. 7, were distributed to 4,000 homes in the target neighborhoods. Residents have until Feb. 28 to take old or waste toxic household products to a northend fire station.

-more-

Figure 6. (continued)

TOXIC WASTES/Feb. 24, 1982/3-3-3-3

Old or waste pesticides, wood preservatives and solvents are being accepted at the local collection center. Paint, household cleaners, antifreeze, explosives and miscellaneous trash are not. Automotive oil and brake and transmission fluids can be recycled at six local service stations.

Residents of the target neighborhoods can also call Metro at 447-4818 to have their waste toxic products picked up without charge.

Several private businesses donated their services to help make the disposal project possible.

When the project ends, the Amalgamated Transfer Co. will take the six 55-gallon barrels of toxic materials from the collection center to Chemical Processors Inc. in south Seattle. There the material will be held until it can be taken to a landfill in Arlington, Ore., operated by Chem Securities Systems.

Project results will be taken to Metro's household hazardous-waste disposal committee, which includes representatives from private industry, environmental groups, public agencies, health organizations and citizen groups. The committee provides input for a comprehensive regional toxicant control program.

-30-

JAG:gbl

In order to insure that incompatible wastes did not get mixed or packed together, pesticides and solvents were divided into the following groups:

- Pesticides,
- Chlorinated Solvents,
- Flammable/Volatile Solvents,
- Non-chlorinated, Non-flammable Solvents,
- Acids, and
- Bases.

Wastes brought in for disposal in their original containers with legible labels were cataloged (see below) by the staff person on duty, placed in the appropriate barrel in the original container, and packed in place with abosrbent. Wastes that were brought in unidentified or not in their original containers were to be tested by a simple protocol which was developed to screen all likely household solvents or pesticides into one of the six categories above. Figure 7 presents a schematic of the test protocol. Tests were to be conducted in very small volumes using eye-droppers and beakers. As it turned out, no unidentified solvent wastes or pesticides were brought in during the study and the test protocol was not employed.

To gain some information on "vital statistics" and attitudes, participants were asked to fill out an on-site quiz. Figure 8 presents the first page of the quiz.

All wastes brought in were cataloged by general class (e.g., pesticide, flammable solvent), brand name (e.g., Ortho Weed-B-Gone), contents (e.g., DDT, carbon tetrachloride), quantity, and age (if known). Figure 9 shows a blank inventory form, which appeared on page 2 of the on-site quiz.

In case there was ever a need for additional information, participants were asked to provide their name and address on the quiz, which was keyed to the catalogue of wastes by participant number. No one refused to give this information, although one box of waste pesticides and solvents was left at the Fire Station door anonymously.

Used automotive oil and brake and transmission fluids were accepted at six local service stations. No attempt was made to accurately count oil recycling participants or to quiz them as they brought the oil in. Station managers were asked to keep a rough tally of participation, or at least note if there was an increase in the number of customers bringing in waste oil. This oil was added to the

Figure 7.

TEST PROTOCOL SCHEMATIC FOR WASTE SEPARATION.

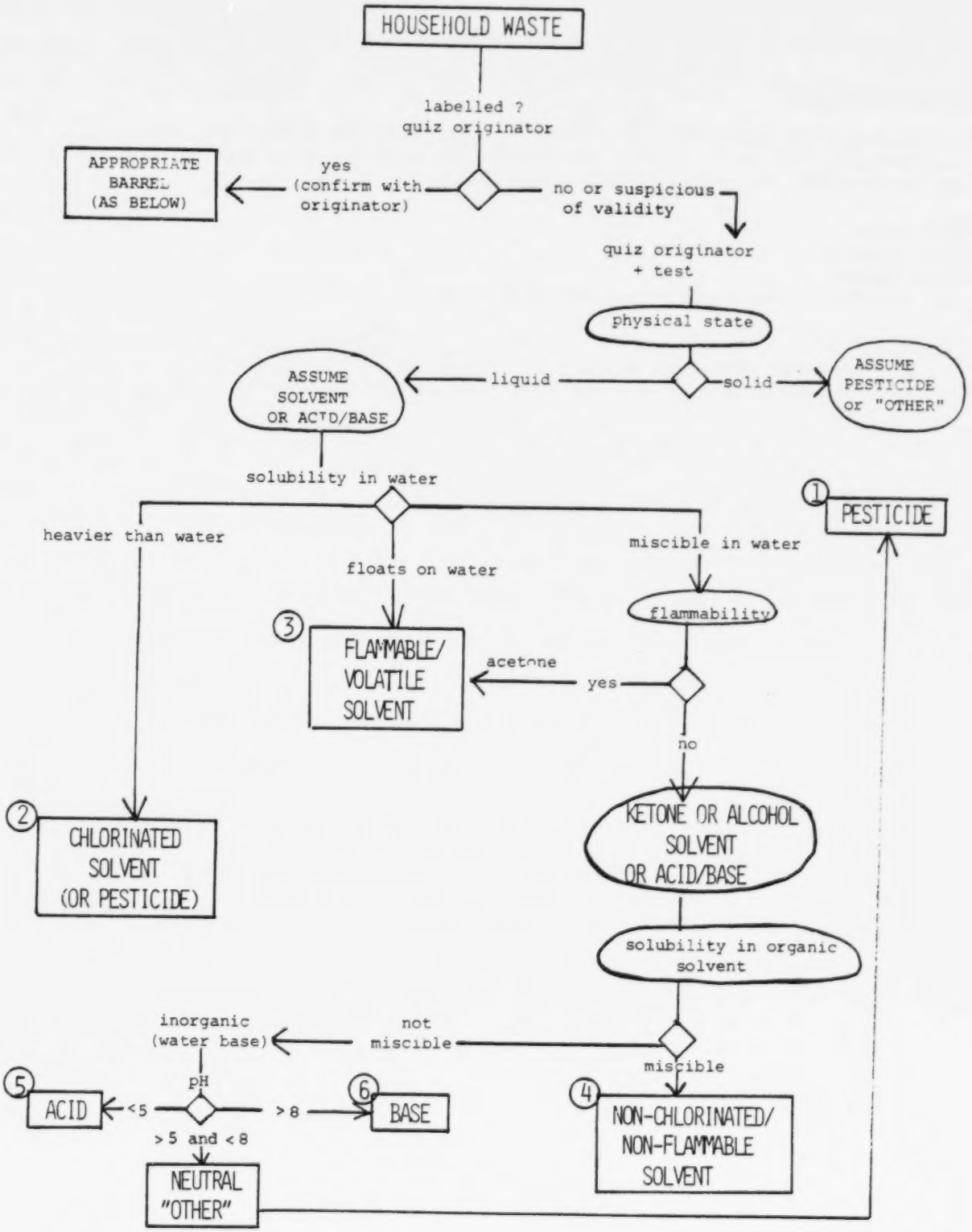


Figure 8. ON-SITE QUIZ.

METRO
Municipality of Metropolitan Seattle

Exchange Bldg. • 821 Second Ave., Seattle, Washington 98104

The On-Site Quiz Number:

We would greatly appreciate you answering the following questions. The answers will help us to further understand the need for this type of service, and to document the results of this experimental project.

Your Name:
Your Address:
Phone Number:
(This information is necessary for legal reasons).

1. Do you live in a house or an apartment? ☐ house ☐ apartment
2. Do you own or rent your home? ☐ own ☐ rent
3. Is your home inside or outside the pilot project area? (See map)
   ☐ inside ☐ outside
4. How did you hear of this service? (Check all that apply)
   ☐ flyer at home ☐ friend/word of mouth
   ☐ flyer at store ☐ school/children
   ☐ poster ☐ other
5. Why did you bring your toxicants here?
   (Check the one which most applies)
   ☐ Primarily because of concern about its effect on my health or the health of my family.
   ☐ Primarily because of concern about its effects on the environment.
   ☐ Other _____
   _____.
6. Do you think you would have a continuing need for this service?
   Yes ☐ No ☐
7. Would you use this service even if: (Check all that apply).

YES	NO	
☐	☐	the site was further away (e.g., transfer station)?
☐	☐	the site was open weekends only?
☐	☐	the site was open during business hours only?
☐	☐	the service only happened once per year
☐	☐	you would have to pay money?

8. If you hadn't used this service, what would you have done with these wastes? (Check all that apply).
   ☐ put down sink or toilet
   ☐ put down storm drain in street
   ☐ put in trash can
   ☐ poured out in backyard
   ☐ would not have disposed.

Figure 9. "WASTE INFORMATION" INVENTORY FORM.

The On-Site Quiz

Number:
Date:
Time:

WASTE INFORMATION

Labelled

General Class	Brand Name	Contents	Quantity	Age

Unlabelled

General Class	Consumer's Guess	Test Results	Quantity	Age

stations' holding tanks which increased the amount that the stations could sell to one of the regional oil reprocessing firms for recycling.

D. Disposal. Both the federal Environmental Protection Agency and Washington State Department of Ecology issued determinations on the applicability of federal and state hazardous waste regulations to the pilot study. Both agencies indicated that household wastes are excluded from regulations. Figures 10 and 11 present EPA's and DOE's determination letters, respectively.

Although technically not required, handling procedures for hazardous waste were followed. The drums were sealed with gaskets and bolt closures and labelled with a sticker as shown in Figure 12. A manifest form was initiated, with "Exempt Household Waste" written in place of the Generator I.D. Number, the EPA and DOE letters attached for explanation, "Miscellaneous Pesticides" given as the waste description of the two barrels shipped, and the catalogue of specific contents attached for reference. Figure 13 shows the completed and returned manifest forms.

Amalgamated Services, Inc., a local hazardous waste transporter, agreed as a public service to pick up the household wastes and transport them free of charge to Chemical Processors, Inc., in Georgetown (South Seattle) for handling. Chemical Processors agreed as a public service to store these wastes temporarily and ship them free of charge to the Chem-Security Systems, Inc. hazardous waste disposal site at Arlington, Oregon. Chem-Security agreed as a public service to accept the household wastes and dispose of them in their secure facility free of charge.

E. Results. The three-week test ran from February 7 to February 28, 1982, during a cold, wet period in Seattle's winter. Fifteen people brought household hazardous wastes to the Fire Station and approximately forty people (based on service station estimates) recycled used oil. In addition, one person requested waste pickup by telephone.

Two and one-quarter 55-gallon drums were filled at the Fire Station; waste pesticides filled two drums (with packing material), while waste solvents accounted for only a portion of another drum. A total of approximately 90 pounds of solid pesticides were turned in plus 6 gallons of liquids. Only 3 quarts of waste solvents were collected. No estimates of volume could be obtained for the recycled oil.

Figure 10. EPA HAZARDOUS WASTE DETERMINATION.

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION X
1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101

REPLY TO ATTN OF: M/S 530

FEB 05 1982

David Galvin
Municipality of Metropolitan Seattle
821 Second Avenue
Seattle, Washington 98104

Dear Mr. Galvin:

In response to your letter of February 4, 1982, the Household Hazardous Waste Disposal Project as described would not be subject to regulation under Subtitle C of the Resource Conservation and Recovery Act. Part 261.4 of the hazardous waste regulations states that the following solid waste is not hazardous waste:

> Household waste, including household waste that has been collected, transported, stored, treated, disposed, recovered (e.g. refuse-derived fuel) or reused. "Household waste" means any waste material (including garbage, trash and sanitary wastes in septic tanks) derived from households (including single and multiple residences, hotels and motels).

As household wastes are excluded from the definition of hazardous waste, Metro is not a generator of hazardous waste, does not need an EPA Identification Number, nor must it comply with any of the other standards applicable to hazardous waste generators. The waste, however, must be transported, stored, treated and disposed in accordance with any applicable local, state and Federal requirements concerning management of solid waste.

Sincerely,

Linda Dawson

Linda Dawson, Environmental Protection Specialist
Waste Management Branch

cc: Tom Cook, Washington Department of Ecology
John Conroy, Washington Department of Ecology

Figure 11. DOE HAZARDOUS WASTE DETERMINATION.

DONALD A. MOOS
Director

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504 • (206) 753-2800

February 8, 1982

Mr. David V. Galvin
Metro, Exchange Building
821 Second Avenue
Seattle, Washington 98104

Dear Mr. Galvin:

In response to your letter of February 4, 1982 and your telephone call to Tom Cook, we have reviewed your request for the Department's determination on the demonstration collection of household toxicants.

The newly-signed dangerous waste rules exclude household wastes from all parts of the regulation except imminent hazard. The latter would only be used in case of dire emergency - unlikely to occur in your project. As you are undoubtedly aware any effort by commercial establishments or industries to utilize your services would violate the spirit and intent of this exclusion.

Please keep us informed about the results of your demonstration. We are very interested in such innovation.

Sincerely,

Earl W. Tower, Supervisor
Solid Waste Management Division
Office of Land Programs

EWT:drs

cc: Charlie Douthwaite

Figure 12. HAZARDOUS WASTE LABEL.

Figure 13. HAZARDOUS WASTE MANIFEST FORM.

DESIGNATED FACILITY (13199)
CHEM-SECURITY SYSTEMS, INC.
STAR ROUTE, ARLINGTON, OR. 97812
ID. NO. Exempt (see attached letters)
ARLINGTON (503) 454-2777 PORTLAND (503) 223-1912
BELLEVUE (206) 827-0711 VANCOUVER, B.C. (604) 688-7612

CHEMICAL TRANSPORTATION MANIFE

30403

1 GENERATOR Household Hazardous Waste Collection ID. NO. Exempt Household W (See attached letters)
ADDRESS c/o HHWD Project MS 81 Metro 821 2nd Ave Seattle 98104 PHONE 447-4518

WASTE DESCRIPTION	CONTAINER QUANTITY	CONTAINER TYPE	GAL.	LB.	FT.
Miscellaneous Pesticides (see attached listing)	2	55-gal drum			14.7

Poisonous
DOT SHIPPING NAME Pesticide, liquid, n.o.s. (2810) DOT HAZARD CLASS Toxic Poison B

PHYSICAL STATE (circle) (SOLID) (LIQUID) SLUDGE OTHER

MAJOR HAZARD (circle) (TOXIC) CORROSIVE IGNITABLE REACTIVE OTHER

SPECIAL INSTRUCTIONS (HANDLING/EMERGENCY)

IN THE EVENT OF A SPILL, CONTACT EITHER OF THE CHEM-SECURITY SYSTEMS OFFICES AND/OR CONTACT, IN THE UNITED STATES, THE NATIONAL RESPONSE CENTER, U.S.COAST GUARD (800) 424-8802, OR CONTACT, IN CANADA, TRANSPORT CANADA (613) 996-6666 FOR EMERGENCY ASSISTANCE.

Title to all materials furnished for disposal herein shall be deemed to be vested in Chem Security Systems, Inc. immediately upon acceptance of such materials by Chem Security Systems, Inc. from the generator or transporter. The generator shall have no right to recovery nor any credit for the potential value of any substances contained in such materials furnished for disposal, except as separately agreed in writing by Chem Security Systems, Inc. Disposal operations by Chem Security Systems, Inc. will be in accordance with procedures approved by the Oregon Department of Environmental Quality and the United States Environmental Protection Agency.

This is to certify that the above-named materials are properly classified, described, packaged, marked, labeled and are in proper condition for transportation according to the applicable regulations of the U.S. Department of Transportation and the U.S. Environmental Protection Agency. Signed and dated by the authorized agent of the generator.

GENERATOR SIGNATURE Susan Ridley DATE 3-4-82

2 TRANSPORTER Amalgamated Services Inc. ID. NO. WAD000711531
ADDRESS 21318 103rd Ave. S.E., Kent, Wash PHONE 854-6643
TRANSPORTER SIGNATURE Orvin L. Berg DATE 3-4-82

3 TREATMENT FACILITY OR COLLECTION SITE Chemical Processors Inc ID. NO. WAD000812
ADDRESS 734 S Lucile St Seattle Wa PHONE 206-762-3868
SIGNATURE Barbara J Thompson DATE 3-4-82

4 ALTERNATE TRANSPORTER NO. 1 Chemical Processors, Inc. ID. NO. WAD000812909
ADDRESS 734 S. Lucile St Seattle, Wa 98108 PHONE (206) 762-3868
TRANSPORTER SIGNATURE L. Knudsen HWT-3 DATE 3-8-82

ALTERNATE TRANSPORTER NO. 2 ID. NO.
ADDRESS PHONE
TRANSPORTER SIGNATURE DATE

ALTERNATE FACILITY ID. NO.
ADDRESS

5 CSSI REQ. NO. 3 BILL OF LADING NO. WEIGHT TICKET NO. GROSS
DISPOSAL AREA T-10 SECTION 17 QUAD A DEPTH V TARE
REC. BY CSSI Jim Hussmey DATE 3-9-82 NET
COMMENTS Split load

Table 14 presents a summary of the types of pesticides collected. The 86 individual containers of waste pesticide turned in are arranged by frequency of occurrence. The most common pesticides seen, in descending order were: chlordane, the 2,4-D/2,4,5-T/Silvex group, DDT, and the various arsenicals.

Table 15 presents a summary of the types of waste solvents turned in.

Appendix C provides complete inventory sheets of the wastes turned in at the fire station.

The on-site quiz was completed by 14 participants. While not representing a large sample size, the responses of those who participated in the project are of interest. They show that:

- 93% owned their own homes;
- 93% lived inside the target neighborhood;
- 86% had learned of the project from a flyer which was left at their home;
- 64% said they had brought their toxicants in primarily because of concern for their health, or the health of their family;
- 79% think there is a continuing need for this kind of service;
- Most participants said they would use this service even if it were less convenient:
  - 79% if it were farther away,
  - 64% if it were open only on weekends, or only during business hours,
  - 71% if it were open only once a year (i.e., a "Dump Day"),
  - 50% if they were charged a fee;
- If they had not used this service, most (57%) would not have disposed of their toxicants; 21% would have put them in a trash can, and 14% would have dumped them in their yard.

The two drums of pesticides in absorbent packing material were prepared as hazardous waste and shipped to Arlington, Oregon, as described above. The 1 pint container of carbon tetrachloride was included with the pesticides, and the remaining small volume of waste solvents was given to a person who would use them up.

Other news coverage of the study occurred after the three week collection period. Figures 14, 15 and 16 show articles that appeared in the Seattle Post-Intelligencer and Metro's Clear Water Watch.

Table 14. WASTE PESTICIDES TURNED IN DURING COLLECTION PROJECT.

The following pesticides turned in by the 15 project participants are arranged in order by frequency of occurrence. Items with asterisks (*) in quantity column were in mixtures with other pesticides in the list.

Pesticide	Frequency (# of individual items)	Quantity (solid/ liquid)	Average Estimated Age (years)
Chlordane	13	5 lbs/6 pts	8
2,4-D/2,4,5-T/Silvex	12	28.5 lbs/4.5 pts	8
DDT	10	6 lbs/10 pts	9
Arsenicals -arsenic trioxide -lead, calcium, and sodium arsenate	7	15 lbs/1.1 pts	15
Diazinon®	4	3 lbs/1.5 pts	7
Lindane	4	0.5 lb/5 pts	5
Carbaryl	4	1.6 lb*/1 pt*	5
Sulfur -sulfur dust -polysulfides	3	2 lbs/4 pts	9
Mercuric Compounds -phenyl mercury -mercuric iodide	3	0.25 lbs*/ 3 pts*	5
Malathion	3	0.7 lb*/1 pt*	6
Captan	2	4 lbs*	5

Table 14. WASTE PESTICIDES TURNED IN DURING COLLECTION PROJECT (Continued)

Pesticide	Frequency (# of individual items)	Quantity (solid/ liquid)	Average Estimated Age (years)
Nitrophenols	2	3 lbs	8
Metaldehyde	2	0.75 lb*	5
Pyrethrins	2	1 lb*	5
Cyanide Salts	1	10.5 lbs	40
Pentachlorophenol	1	2 pts	-
Warfarin	1	1 lb	-
Aldrin	1	1 pt	2
Naled	1	4 pts*	5
Toxaphene	1	2 pts	5
Diuron	1	1 lb	-
Rotenone	1	0.5 lb*	-
DDD	1	0.5 lb*	-
Maneb	1	0.6 lb*	-
Folpet	1	0.3 pt	10
Trichlorfon	1	0.3 pt*	-
Methyl-Demeton	1	0.3 pt*	-

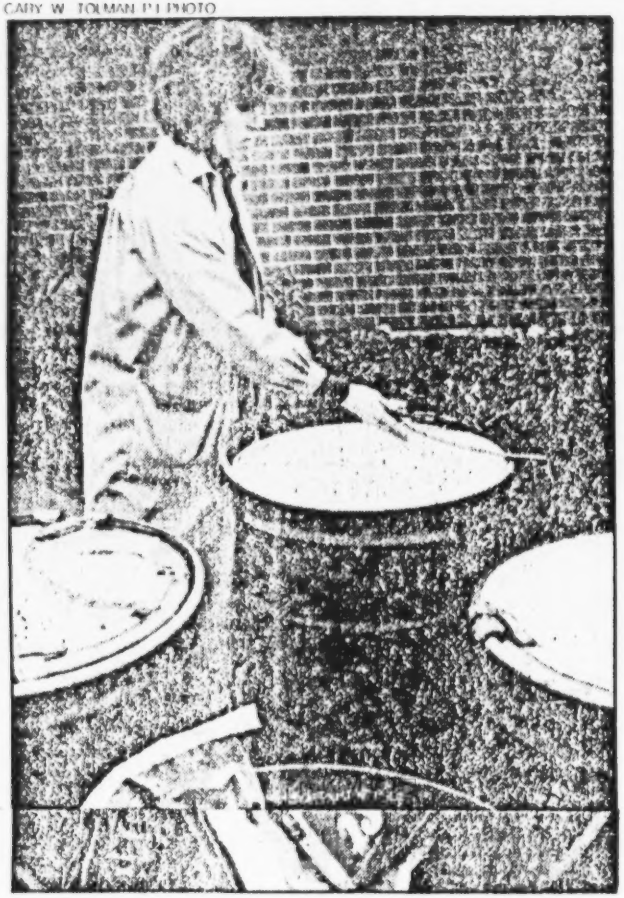
Table 15. WASTE SOLVENTS TURNED IN DURING COLLECTION PROJECT.
The following solvents turned in by the 15 project participants are arranged in order by frequency of occurrence.

Solvent	Frequency (# of individual items)	Quantity	Average Estimated Age (years)
Petroleum distillate	2	2.4 pts	5
Gasoline lubricant	2	2 pts	-
Carbon tetrachloride	1	1 pt	30
Naptha	1	0.4 pts	-

Figure 14. SEATTLE POST-INTELLIGENCER ARTICLE.

Poisons aren't throwaways

CARY W. TOLMAN/P-I PHOTO



Susan Ridgley, coordinator of Metro's hazardous waste containment program, checks discards at a drop station in northwest Seattle. Officials had hoped for greater public participation

Reproduced from best available copy.

By Solveig Torvik
P-I Reporter

Are your weed killer and paint thinner poisoning Puget Sound?

Metro isn't sure, but an experiment that ended last weekend indicates that there may be more hazardous wastes stored in people's garages and basements than agency officials thought.

Metro asked residents of 4,000 households in the Blue Ridge, Crown Hill and Broadview areas to bring their pesticides, herbicides and solvents to the fire station at 130th and Phinney the past three weeks for free disposal.

Only 14 people showed up, far fewer than Metro officials had hoped.

"But each person had a lot more stuff than we expected," project coordinator Susan Ridgley said yesterday.

Metro assumes that households' toxic substances are helping to pollute Puget Sound, but the agency does not know to what extent, said Ridgley's boss, Metro water quality planner Dave Galvin.

"We had everything from big bags of Weed and Feed to little bottles of arsenic," said Ridgley. Arsenic was used as an insecticide for fruit trees.

Most people brought in pesticides, though there were such things as a 10-pound bag of cyanide, possibly used for cleaning purposes, and a 40-year-old fire extinguisher which had a glass ball filled with carbon tetrachloride that was meant to be thrown at fires.

Most of the pesticides had DDT, which is banned, or contained 2,4-D, 2,4,5-T or other suspected carcinogens.

Many of the poisons had been stored in the residents' homes for many years.

The worst problems

The experiment was in response to public questions about where to dispose of household hazardous waste. What to do with Fido's flea collar, the oven cleaner, spot remover or the roach killer has become a growing problem as more people become aware of the long term chemical dangers inherent in disposal of everyday household products.

Metro says, "Don't put them down the drain" because this will send them into the Sound. Solid waste officials say, "Don't put them in your garbage can" because of possible leaching problems in landfills. Air pollution officials say, "Don't let it evaporate" and foul the air, explained Ridgley.

Metro officials decided the worst problems were pesticides, solvents such as paint thinners and furniture stripping solutions, and automobile oils.

"I don't consider pesticides as much a problem as automobile oil," said Ridgley, who noted that studies show many people change the oil in their cars, but very few have it recycled.

This means the oil is dumped in the back yard or on the pavement and finds its way into the storm sewers and eventually into Puget Sound. "One part of oil can contaminate a million parts of water," said Ridgely.

Metro officials decided that with some items such as paint, the solvents should be allowed to evaporate and the owner should "close the can up tight and put it in the garbage can," she said. The group also came to the conclusion that "it's okay if somebody puts their oven cleaner in the trash."

They want to institute a telephone dial tape to offer information to the public on proper disposal. For now, information can be obtained by calling Metro at 447-5885.

Figure 15. CLEAR WATER WATCH ARTICLE -- MARCH 1982.

CLEAR WATER WATCH

A report on the progress of water quality planning by the Municipality of Metropolitan Seattle March 1982

Project tests household toxic waste disposal

Metro is conducting an experimental project to identify hazardous products used in Seattle metropolitan area households and determine how willing citizens are to dispose of toxic wastes properly.

Results from the study, which is part of Metro's household hazardous waste disposal project, will help agency planners evaluate residential sources of toxicants and develop a residential toxicant control program.

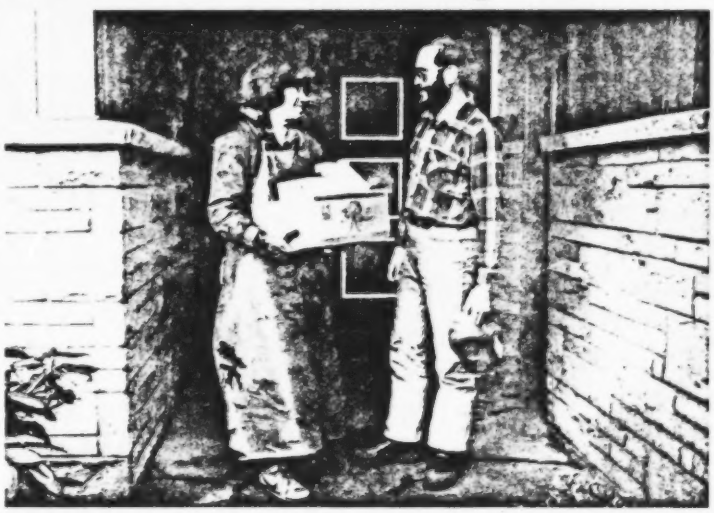
To begin the study, a consultant conducted telephone interviews with 514 homeowners: 300 in greater Seattle and 214 in a target neighborhood—the Blue Ridge/Crown Hill/Broadview area.

Respondents completed a 10-minute questionnaire on their perception, use and disposal of toxic household products. Key results include:

—About two-thirds of those surveyed expressed some or great concern regarding toxic products and hazardous waste disposal.

—The most common methods of toxic waste disposal listed by respondents were throwing material in the garbage, on the ground or down a storm drain.

—A high percentage of respondents said they would use a nearby waste disposal site if available.



Susan Ridgley, coordinator of Metro's household toxicant project, collects hazardous wastes from Olympic Manner resident John Striker. Metro conducted an experiment Feb. 7-28 in northwest Seattle to test how willing citizens are to dispose of household wastes properly.

"THE TELEPHONE SURVEY provided valuable information about what people said they would do regarding toxic-waste disposal," said Dr. Joe Simmler, project manager of Metro's toxicant programs. "The three-week pilot study in the target neighborhood was designed to find out what people actually would do if given the proper information and opportunity."

Flyers explaining the hazardous waste pilot project, held Feb. 7-28, were distributed to 4,000 homes in the target neighborhood. Residents were urged to take old or waste toxic household products to a local collection center.

Pesticides and solvents were collected at Fire Station No. 24 at 130th and Phinney. Automotive oil could be recycled at several area service stations.

Citizens could also call Metro to have their waste toxic products picked up without charge.

SEVERAL PRIVATE BUSINESSES donated their services to help make the disposal project possible.

Amalgamated Services trucked the barrels of toxic materials from the collection center to Chemical Processors Inc. There the material was held until it could be taken to a landfill in Arlington, Oregon, operated by Chem Securities Systems.

Project results will provide the household hazardous waste disposal committee with detailed information on what types of products Seattle residents are using and how willing they are to dispose of toxic materials correctly.

The advisory committee includes representatives from private industry, environmental groups, public agencies, health organizations and citizen groups.

"Information from the hazardous waste disposal project will help Metro identify ways to control toxic wastes entering area waters and the wastewater collection system from residential sources," Simmler said. "Possible control methods include consumer education programs and a regional network of collection centers."

METRO

Figure 16. CLEAR WATER WATCH ARTICLE -- APRIL 1982.

CLEAR WATER WATCH

A report on the progress of water quality planning by the Municipality of Metropolitan Seattle April 1982

Household hazardous waste study a success

Metro has completed a three-week pilot study testing use and disposal of pesticides, automotive oil, solvents and other household toxic products.

Now agency planners are examining the study results to develop a residential toxicant control program, which will be an integral part of Metro's comprehensive toxicant control plan.

As reported in the March *Clear Water Watch*, residents of the Blue Ridge, Crown Hill, Broadview area in northwest Seattle were urged to take old or waste toxic products to a local collection center.

Pesticides and solvents were collected at a neighborhood fire station, and automotive oil could be recycled at several area service stations.

DURING THE PILOT STUDY, 15 people came to the collection center. They filled two 55-gallon drums completely and part of another container with toxic wastes.

Pesticides were the most common toxic product brought in, averaging about six pounds of hazardous waste per person. Many products, such as DDT and 2-4-5-T, were several years old and are now banned by the federal government.

"Although we were a little disappointed in the number of people who participated, we believe the pilot study to be very successful," said Dr. Joe Simmler, project manager of Metro's toxicant programs. "If people in the greater Seattle area responded in a similar manner, we would end up with 400 barrels of extremely hazardous materials."

MOST SERVICE STATION managers in the target neighborhood reported a significant increase in used automotive oil brought to their stations during the three-week study. About 42 people recycled their oil during the study.

To complete the pilot study, Metro will conduct another telephone survey with 200 residents in the target neighborhood. People will be asked whether they heard about the pilot study, and if so, why they did or didn't participate.

Metro is now investigating ways to handle the large volumes of hazardous materials apparently present in residential areas. One possible plan is to have an annual toxicant dump day in Seattle to give people a chance to dispose of toxic wastes properly.

Council approves Renton consultant contracts

The Metro Council approved contract awards March 18 for predesign work for the Renton expansion program.

Contracts call for detailed predesign work on the Renton wastewater treatment plant expansion and the first phase of engineering, geotechnical and oceanographic studies for the system that will transfer effluent from the plant to Puget Sound.

Brown and Caldwell Consulting Engineers of Seattle will perform the predesign on-site work, and URS Engineers of Seattle will perform the first phase of the predesign work for the effluent transfer system.

Brown and Caldwell consultants will investigate treatment process, site layout and equipment alternatives and recommend specific design actions for modifying the existing facilities and adding new ones. The contract is for $1.27 million.

Predesign work for the transfer system is divided into two phases. The first phase, covered by the $2.68 million URS contract, will provide geotechnical and oceanographic information about conditions existing along the effluent transfer route and at the outfall site.

The second phase, to be awarded later this fall, will use the geotechnical and oceanographic information to develop criteria for the actual design of the facilities.

Both consultants will begin work this month.

METRO

IV. FOLLOW-UP AWARENESS AND ATTITUDES SURVEY

The following report presents the objectives, methods and results of the "after" survey conducted by Leonard Guss Associates, Inc., as prepared for Metro by Leonard Guss and Judy Leraas of LGA.

The questionnaire used in this follow-up survey is contained in Appendix D.

Preceding page blank

HOUSEHOLD TOXICANTS - AWARENESS AND ATITUDES, PHASE II

On December 30, 1981, Leonard Guss Associates, Inc. delivered to Metro the results of a telephone survey dealing with respondents' attitudes towards and opinions about the issue of disposing of toxic and hazardous household materials. One segment of this survey was conducted entirely within Census Tracts 5 and 16.

Using the information obtained during that survey, Metro organized a pilot project to inform residents of the selected areas of the need and opportunity to dispose of hazardous household materials. Information was provided by a flyer, and using other media; collection sites were established and manned; results of the effort were tabulated for analysis.

To complete the analysis, Metro desired to learn how aware the inhabitants in the selected areas were of the collection effort, how they responded to it, and their attitudes towards and opinions about the topic, now that an opportunity had actually been provided for safe disposal of household wastes.

LGA was commissioned to conduct a brief survey with the following objectives:

OBJECTIVES

1. Awareness of the pilot project, which was conducted February 7 - 28, 1982;
2. Evaluation of information provided;
3. Participation in the pilot project, either at fire station or service stations or in changes in buying habits;
4. Reasons for participating or not participating;
5. Attitudes on future: important issue? willingness to participate in future disposal option (e.g. a Spring "dump day")? willingness to pay money for service or have local governments fund servie?
6. Reason for concern about issue: human vs. environmental health, acute vs. chronic problems.

METHOD

As before, the chosen method was the structured telephone interview; 203 interviews were completed with heads of households living in the two census tracts. A questionnaire was developed to provide the desired information, and was reviewed by Metro prior to the interviewing. All interviews were selected on a randomized basis from the appropriate reverse telephone directory, and a ten percent sample of the interviews was validated. The interviews were conducted between March 12 and 22, 1982. The obtained information was coded, edited and computer analyzed by LGA as the basis for the report.

The respondents consisted of 41 percent male and 59 percent female. Family annual incomes were as follows:

Under $15,000	12.8 Percent
$15 - $25,000	16.3 Percent
$25 - $35,000	18.2 Percent
Over $35,000	22.7 Percent
Refused	30.0 Percent

FINDINGS

After the interviewer had secured the cooperation of an eligible head of household for the survey, the first question posed dealt with awareness of the Metro pilot project. Forty-five percent were aware; 55 percent were not (fig. 17). Levels of awareness were not affected by income or by sex.

The persons who were aware were asked how they had learned of the project. Of those who knew of it, the flyer was the most frequent means (17 percent of the sample), followed by the newspaper (11 percent). No other means was significant.

Figure 17

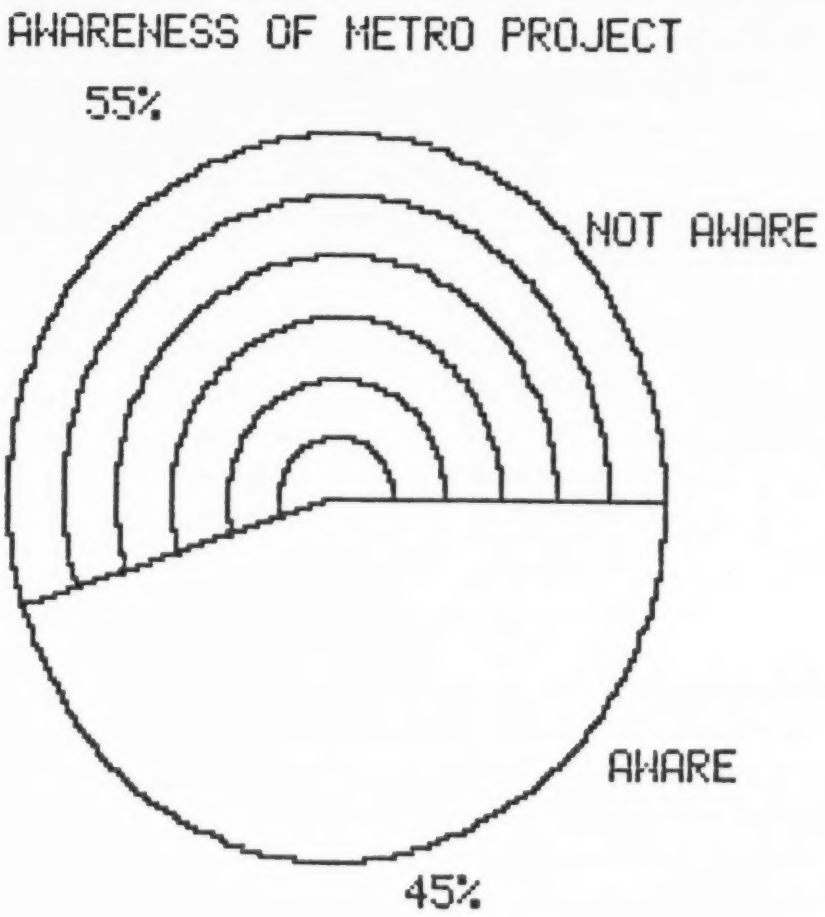


Table 16

HOW DID YOU LEARN OF THE PILOT PROJECT?

Method	Percent
Flyer	17.2
Read in paper	10.8
Heard from friends	2.4
Ad on television	1.5
Radio	1.0
Some other means or could not recall	12.4
Did not know of project	54.7
	100.0

If respondents did not volunteer that they had received a flyer, one way or another, they were asked about it directly. With this aided recall method, 67 persons, or 33 percent of the respondents, recalled having received a brochure, about twice as many who remembered the flyer on an unaided basis. All other respondents either claimed they had not received a brochure or were unaware of whether they had or not, that is, some other family member might have received it.

The next question considered participation in the pilot project. This was extremely limited. Only 19 persons claimed to have participated, in some fashion or other. Table 17 shows the responses.

Table 17

PARTICIPATION IN THE PROJECT

	Number	Percent
Did not participate	184	90.6
Participated/read the material	15	7.4
Checked garage/house	2	1.0
Took material to fire station	1	0.5
Discussed with family or friends	1	0.5
		100.0

Those who were interested often did all of the above: read the material, took toxic wastes to the site, discussed it with friends and neighbors, etc.

Respondents were then asked their reasons for participating or not participating in the project. These are given in Table 18 Those who gave reasons for not participating simply stated they had no disposable material or were unaware of the project. Most had no specific rationale.

Table 18

REASONS FOR PARTICIPATING OR NOT PARTICIPATING IN THE PROJECT

For Not Participating	Percent
Have no toxic/hazardous substances	20.7
Did not know about it	22.7
Too busy/forgot	8.4
No particular reason	43.8

For Participating	Percent
Am concerned about toxic waste disposal	2.4
Like to participate in community events	2.0

The question was next asked as to whether the respondents had any items in their possession which they considered hazardous and would like to dispose of. Eighteen percent (37 persons) stated they had such items, while 78 percent did not and four percent did not know. Possession of such substances seems somewhat related to income; higher income respondents ($25,000 and up) comprised half the possessors, while lower income respondents comprised 24 percent; the remainder refused to supply income information. The make-up of the toxic/hazardous items is shown in Table 19.

Table 19

TOXIC/HAZARDOUS ITEMS POSSESSED BY RESPONDENTS AND AVAILABLE FOR DISCARD

Item	Number Mentions
Pesticides	9
Oil	8
Cleaners/solvents	6
Herbicides	2
Paint	4
Other materials	12
	41

The question was then asked of respondents if they would be likely to use collection sites for household toxicants if they were available. As shown in Figure 18 58 percent said they would, 31 percent would not, while 11 percent did not know.

The next question asked who should pay for such a site. As shown in Figure 19 almost two thirds (61 percent) feel that there should be a user fee, while 18 percent believe it should be funded by local governments; the rest had no opinion. Higher income persons voted in favor of user fees almost two to one over lower income respondents.

A key question asked the basis for the respondents concern over the disposal of household toxicants. Although the interviewers were instructed to encourage respondents to choose between the first two choices, a number of the respondents were unable to place one option ahead of the other. Table 20 shows the responses.

Table 20

REASONS FOR CONCERN REGARDING HOUSEHOLD TOXICANTS

Reason	Percent Responding
Personal/family health	16.7
Potential environmental impact	58.6
Both	16.7
Other reasons or no answer	8.0
	100.0

Figure 18

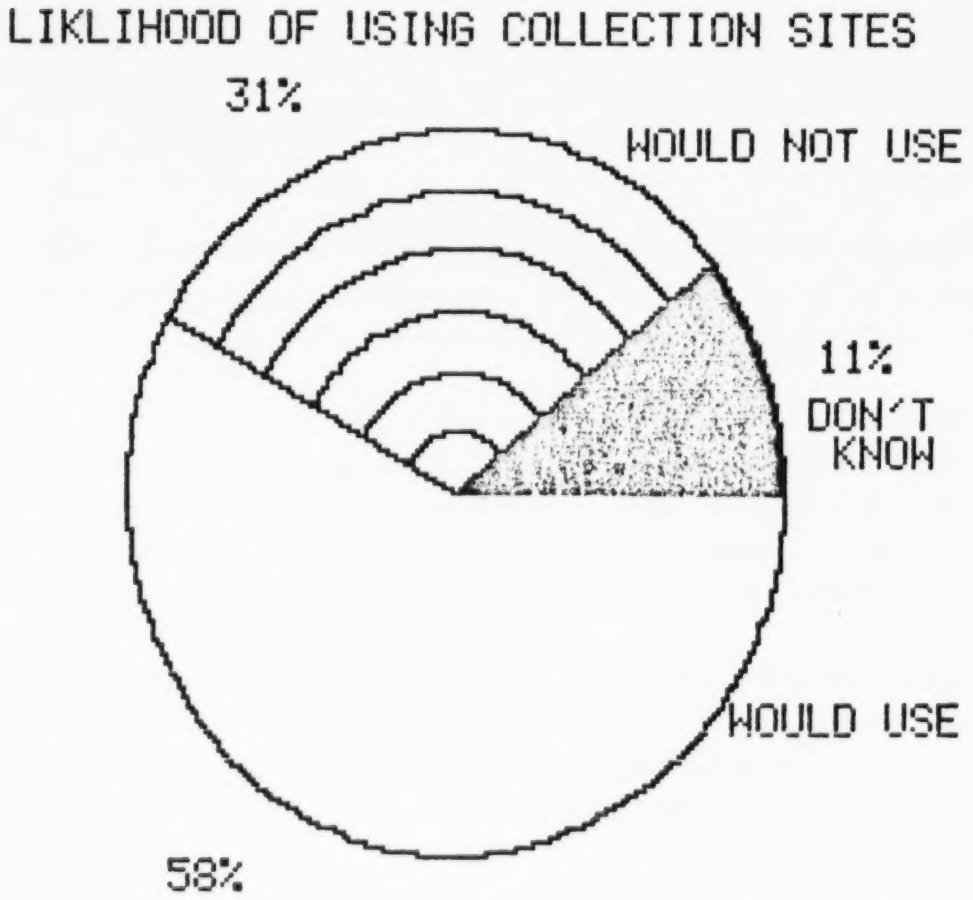
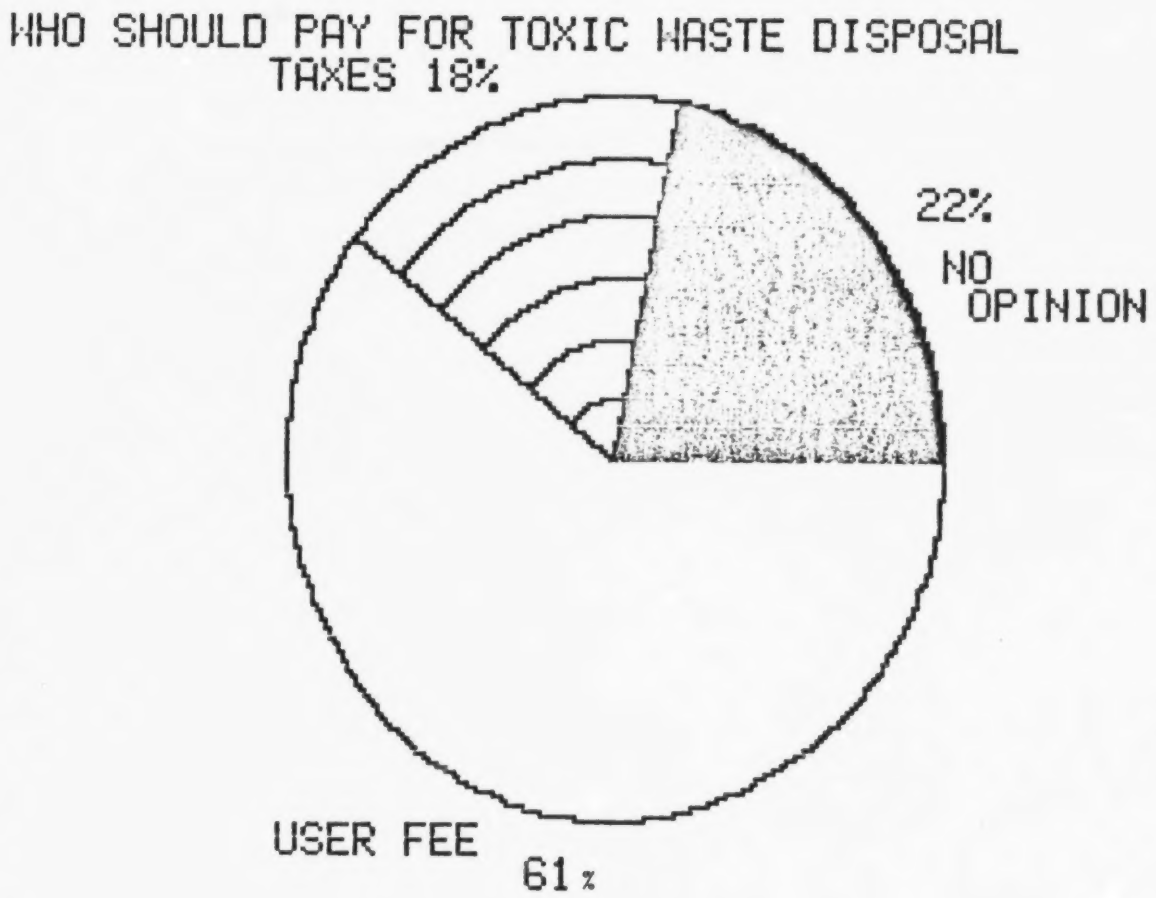

LIKLIHOOD OF USING COLLECTION SITES
31%
WOULD NOT USE
11%
DON'T KNOW
WOULD USE
58%

Figure 19


WHO SHOULD PAY FOR TOXIC WASTE DISPOSAL
TAXES 18%
22%
NO
OPINION
USER FEE
61%

The final question of the survey asked the degree of importance that respondents ascribe to the whole issue of disposing of household toxicants. Figure 20 shows the results. The mean response is 2.38, which indicates an overall weighting granting some, but not a high, degree of importance.

The largest number of respondents ranked it as very important - 38 percent. About one fourth of the respondents are indifferent, and only 18 percent consider the subject as unimportant to one degree or another. Income is inversely related to perceptions of importance of this topic; the higher the income the less important the subject is considered. Sex is directly related: women ascribe the highest importance to this issue, at twice the level of men.

Figure 20

PERCENT
IMPORTANCE ASCRIBED TO PROPER
DISPOSAL OF HOUSEHOLD TOXICANTS
1=VERY IMPORTANT
2=IMPORTANT
3=INDIFFERENT/NO OPINION
4=UNIMPOTANT
5=VERY UNIMPORTANT
100
80
60
40
20
0
1
2
3
4
5

CONCLUSIONS

The follow-up survey confirms both the expectation of low participation derived from the initial survey, and the actuality of such low participation experienced by the pilot project.

The level of awareness was good. Almost half the respondents claimed awareness of the project; certainly some of the others lived in family units where other members were also aware. However, of the promotional media only the flyer seemed to have generated some awareness.

Participation was very low; this was because very few persons had anything they wanted or needed to discard. Either they possessed no toxicants, or intended to use what they had, or were unaware of the project or had no particular reason, all of which indicates a low priority. However, when asked, 18 percent of the respondents have at least some toxic/hazardous materials which they would like to dispose of, although for most it is not a high priority issue. Oil, cleaners, solvents and pesticides make up the bulk of these materials.

Respondents think that user fees should pay for waste disposal, since it is obviously a rather infrequent requirement, and probably reflects the prevalent desire to cut governmental expenditures.

Finally, as was learned in the first survey, the topic is important to a large segment of the population, and especially so to women. More than half (55 percent) of the respondents ascribe to it some or much importance; the mean rating is not particularly high because of the many persons who do not believe the need is significant. However, despite the importance of the subject in the eyes of many respondents, the need appears quite limited because most respondents do not have, not do they anticipate having, significant volumes of hazardous or toxic household wastes of which to dispose.

V. PROJECT CONCLUSIONS

Our conclusions concerning the public opinion surveys and the pilot study fall into one of three categories: conclusions concerned with awareness of the issue, those which evaluate the response of the general public, and those which deal with future planning.

A. Awareness. What did the surveys tell us about the thoughts and opinions of the general public concerning household hazardous waste? They determined that people are knowledgeable about the presence of products in their home that can be considered toxic or hazardous. This knowledge appears to be based on acute poisoning concerns rather than an awareness of their effects in the environment. Products with high human hazard but low environmental damage potential (e.g., drain cleaners) were rated as "most hazardous" while those which are more of a threat to the environment than to the individual (e.g., motor oil) were ranked the lowest. This finding is in contrast to the public's stated expressions of concern, however. When asked whether their concern about household hazardous waste was based primarily on environmental or human health reasons, most people stated that it was because of environmental threats.

These findings have important implications for any educational programs on the topic. Given that the public already has a general awareness of the subject, educational materials should emphasize the environmental hazard of household product use or disposal, and explain the difference between human health and environmental concerns.

The surveys determined that the presence of toxic/hazardous household products is widespread in the community; seven out of the ten products named in the questionnaire were found in more than half the homes. These were, in descending order of frequency: Household Cleaners, Auto or Furniture Polishes, Paints or Thinners, Motor Oil, Pesticides, Fertilizers, Chemical Drain Openers. Despite the ubiquitous nature of these products, however, people didn't seem to dispose of them frequently. Only 28% said that they had disposed of any of the 10 products (the above, plus weed killers, antifreeze and wood preservatives) in the last year. This finding was further reinforced in the second survey, when only 18% of the respondents said they had something in their homes they considered hazardous that they wanted to dispose of.

Finally, we also learned from the surveys that the public is concerned about the household hazardous waste disposal issue; 66% of the first and 55% of the second survey expressed some or high concern for the subject.

B. Response. When given the chance to take action in the pilot study, how did the public respond? According to the first survey, an overwhelming percentage had stated that they would be willing to take some action, such as using a neighborhood collection site or an annual "dump day" (free of charge). Furthermore, the public indicated a willingness to buy less toxic products, or to buy toxic products in smaller units.

The actual results of the pilot study indicated a different response rate, however. During the 3 week study, in a neighborhood of about 4,000 households, 55 people (roughly 1%) came to a collection site. They brought in about 90 lbs and 6 gallons of hazardous wastes, filling 2½ drums. Approximately half of these wastes were banned pesticides. They also brought in an unknown quantity of waste motor oil--probably about 40 gallons.

The second survey determined that less than half of the test population were aware of the pilot study despite door-to-door leafletting, etc. Most people who were aware of the study could give no specific reason for not participating, while 20% said they had nothing to dispose of. Some factors that could have contributed to this low response include:

- time of year of study (February),
- information transfer methods (e.g., little use of mass media),
- choice of neighborhood,
- general public intertia to new programs.

C. Planning. What did this pilot study mean in terms of 1) a regional control plan for household quantities of toxicants and 2) lessons for other municipalities or organizations interested in setting up a collection program?

1. Regional Control Plan. We found that, while people are concerned about the issue, there does not appear to be a large need for a massive collection network (i.e., daily collection of wide variety of toxic products at numerous collection sites). In particular, it appears that there is not a need for solvent collection, and some of the other hazardous household products, such as cleaners, antifreeze and paint, were determined to be not environmentally hazardous enough to warrant a collection program.

Pesticides and motor oil are the two classes of toxic products for which a collection program should be provided. Banned pesticides exist in substantial amounts in homes. Using gross calculations, we can estimate that as much as 135,000 lbs (300 barrels) of banned household pesticides may be sitting in people's homes in the Seattle/King County area alone. Because these products are no longer available for sale and thus the supply is finite, we believe that the preferable collection system would be a "sweep out" method, such as a regional dump day, in conjunction with an on-going but not as widespread or convenient collection service, such as the use of the 5 Health Department offices in the County.

The public does not seem to regularly dispose of large quantities of most household hazardous waste, except used motor oil. Approximately 1.4 million gallons of waste motor oil are produced and could be recycled in King County alone each year. Studies have shown that, while most people know that oil can be recycled, only a very small percentage know how or where to do it. Thus, an extensive promotion of oil recycling awareness is warranted and greatly needed.

In general, we believe that, given the level of interest and expressed willingness to change habits, increased public education on the HHWD issue would be worthwhile and well-accepted.

2. Suggestions for other programs. The surveys and pilot study that we conducted have prompted a great deal of interest around the country, and we have received numerous requests from organizations interested in setting up similar collection programs. Several points are worth emphasizing for those interested in adapting this program to other areas:

- Because of the experimental design of our pilot study, we were not able to use mass media to transfer information. The use of TV, radio and newspapers would have done several things:

  1. inform the half of the population who, for whatever reason, were not informed via our flyer;
  2. reinforce the message for those who already were aware via the flyer;
  3. provide an effective forum for explanation of why this is important, and background information on the hazards of these products (especially necessary for solvents).

  Furthermore, an initial press release is not enough--media presentations should be attractive and repetitious.

- Although this may depend on local conditions, the time of year is probably important in determining the response (this has definitely been shown for oil collection); spring and fall are probably the best times.

- Response may vary greatly according to the composition of the service area. For example, a similar collection program that was done in a rural area in Kentucky collected significantly greater volumes from a smaller population than our study: they collected 17 barrels, containing 1500 lbs of dry and 500 gallons of liquid banned pesticides in 1 week.

- The key to putting together a collection program on a tight budget is the transportation and disposal costs. We were fortunate in having a cooperative and generous private sector. Credit should be given for such a public service in all publicity on the project.

- There are a number of avenues that we did not pursue in this study that would be extremely valuable for other regions to investigate. These include:

  - setting up an effective system to collect waste solvents (including education!);
  - collection of special hazardous wastes from small scale hobbyists or "small quantity" commercial generators;
  - use of neighborhood associations or community service groups to run the programs on a local level, or to distribute educational materials;
  - use of a telephone collection service (what we called "The Wizard") whereby a phone number would be widely published, and collection would be door-to-door by request. This would eliminate the need for dispersed, duplicate collection sites, each individually staffed, and could provide a low-cost, effective alternative.

REFERENCE

Metro. 1981. Household Hazardous Waste Disposal Project--Work Plan. Seattle, Washington: Metro, 18 pp.

APPENDIX A:

PILOT STUDY DESIGN CONSIDERATIONS

Preceding page blank

MEMO

August 25, 1981

TO: HHWD Committee

FROM: Dave and Susan

SUBJECT: Pilot Project Summary

We would like to present some of our thoughts on the design of the pilot projects which have emerged during many discussions and brainstorming sessions. After lots of false starts and casting around, we think there are generally three areas for discussion and decision. They are:

1. What are we testing and how shall we test it?
2. Strategies and designs for surveys.
3. What are our limitations?

What/How to Test

What do we want to learn through these pilot projects? What are our goals? We started out figuring that we want to test a hypothesis. That hypothesis might be:

> "Given the chance, people will modify their habits of disposal of hazardous waste in their homes."

What does the phrase "given the chance" mean? First and foremost, it means EDUCATION - that they are aware of the potential hazards of these products. This education must be convincing, well presented and available. The "chance" also means CONVENIENCE, both physical ease of changing habits with readily available methods or alternatives for disposal and financial convenience in low or no cost.

What are the variables that we might want to test? They include:

(1) Education - may get different responses depending on how we present the facts, or what facts we present. Should we emphasize the human health or the environmental hazard? What kind of media should we use?

(2) Convenience - We could get different responses depending on how convenient the alternative disposal methods are. All methods would probably require an initial separation of trash. Then we could have a gradient of convenience:
   a) Regular curb to curb
   b) Local collection site - open certain hours

METRO

c) One collection site for city (i.e. ChemPro)
d) Once per year dump day - irregular

(3) Money - Is there a difference in response related to whether you charge a fee or not? Is there a threshold level for fees, beyond which no one will respond? It would be difficult to test this variable unless we ran the pilot projects in economically equivalent neighborhoods (see SORT Project Summary in Attachment #1).

(4) Type of Product - Do people perceive more of a danger from some products than from others? could be related to type of education. Would people change their buying habits in addition to (or rather than) their disposal habits for certain products?

If we took all these variables and tested every option, we'd be running probably 50 pilot projects, which is unrealistic. Perhaps we could test a range of these variables, such as:

1. Control group - No "chances", survey only;
2. Local free collection site (e.g. Fire Dept.)--convenient and available;
3. Local collection site that charges money--still convenient and available, but now costly;
4. Local collection site, only open once per month--still convenient location but not as available;
5. Once per year dump day, held at 4-5 locations throughout city--fairly convenient, not very available;
6. One collection site for city (i.e. ChemPro) - inconvenient, fairly available;
7. The "wizard alternative" - just call a phone number and wizard will tell you how to dispose of substance using currently available methods.

We came to a couple of tentative decisions during our brainstorming. One, that we shouldn't test any option which is not feasible for a full scale operation. For instance, it is highly unlikely that we would ever get the funding for a curb to curb hazardous waste pick-up service. Therefore we shouldn't test that alternative. The other decision is that we need to standardize the education and not test for variability in that area. After all, this isn't a project to see which is the most effective communication media (see SORT project summary). Also, if we standardize education we'll be able to use mass media (newspapers, radio, TV).

Finally, maybe we should consider testing only one of these variables. In other words, we'd find out whether people would respond at all to the combination of education and a service. In which case, we wouldn't be testing what people will respond to.

Strategies and Designs for Surveys

The original plan was to do an initial survey called a "needs assessment" -- see the section from Tizzy's report in Attachment #2. The suggestion was made that perhaps this initial survey should be done only in the neighborhoods where the pilot projects would be done. This would give us a basis to compare changes in behavior. This is a decision that we need to make soon if we are to hire an outside consultant.

There are a wide range of possibilities that we are dealing with:

Type of Survey: door to door
mail
telephone

Location: City-wide
Neighborhood

Statistical Basis: Random
Non-Random (every house)

Some discussion on this: There are pros and cons to making the initial survey be a true "needs assessment" (i.e., random and citywide). The advantage is that it removes the socio-economic bias that would be found in a neighborhood survey. It would also provide a better base for making generalizations and formulating policy. The problem is that we cannot assume that the results of the citywide survey will reflect the original status in the neighborhoods where we are testing. (In other words, you can't move from general to specific.)

If, on the other hand, we have the initial survey be only in the neighborhoods, then we also have some pros and cons. The problem is that we wouldn't be able to generalize, and it might be more expensive. The advantage is that we'll get some very specific information, and be able to track any changes in opinion for before/after pilot projects.

Are you following all this? Please assess these various pros and cons, and decide which you think would be best.

What Are Our Limitations?

Please read the accompanying description of the SORT project (Attachment #1) and what we can learn from it. It suggests that there are certain inherent limitations on response, scope and education.

We have in the neighborhood of $12,000 to do the entire pilot project program, including paying for any outside consultants. Dave is getting some price quotes from survey firms. The pilot projects

are scheduled (according to work plan) to run for 4 months, from mid-October to mid-February.

The SORT project found very large differences in response between neighborhoods, assumed to be of socioeconomic origin. This is a big variable to contend with if we wish to test different disposal options.

We are very interested in hearing your thoughts. We need to move fairly quickly into the pilot project mode because of our tight grant schedule, while continuing the wrap-up of this product research. Please think through the ideas presented in this memo and come ready for a lively discussion at our next meeting on September 3rd--it should be a good one!

SR/DVG:mb

Attachment #1: SORT PROJECT SUMMARY

The SORT project was a program that the City of Seattle Solid Waste ran from July 1978 - October 1979. It was meant to gauge the response of Seattle citizens to a curb to curb recycling program. Its full name was "Seattle Solid Waste Pilot Programs: Source Separation and Variable Rate." Source separation means the participants separate out the recyclable materials for pickup; variable rate means that some participants had the option of a lower rate if they decreased the number of trash cans that they used. If any of you would like a copy of the SORT report, ask Susan.

In general, we can draw the following conclusions from their study:

1) Despite the convenience of the pilot programs, the average participation rate (# participating households/neighborhood) was only 23%. If we assume that those who recycle will also be concerned about hazardous waste, we could expect a similar participation rate.

2) Participation rates fell during the fall and picked up again in the winter and spring.

3) Using the variable rate system had only a minimal effect on participation. Therefore money is not a factor(?) (I have doubts about that conclusion.)

4) Participation rates were related to income levels (as reflected in sector of city): Northwest 29%, Northeast 32%, Southwest 17%, Southeast 13%.

5) Low and high income areas generated slightly more recyclables/home (volume) than middle income.

6) Although participation rates remained fairly constant, volumes varied greatly from month to month (trash is seasonable).

7) Their initial survey consisted of a public information program whereby they polled everyone in the neighborhoods (by phone, response cards, doorbelling) as to whether they would participate. 57% indicated that they would participate--only 26% actually did (therefore half the people were lying?)

8) The SORT newsletter was identified by participants as the most effective form of communication, followed by newspapers, telephoning and Public Service Announcements (PSA's) on TV.

9) Finally, none of the public information programs succeeded in increasing participation beyond the initial rate.

Attachment #2: Excerpts from "Chapter 6: Recommendations for Educational Programs...", Household Toxicants and Water Quality (E. Bennett, Metro 1980).

6.1 INTRODUCTION

The first step in the planning of educational programs is to determine if there is a need for them or not. This is accomplished through the gathering and interpretation, first of all, of preexisting data, and then the generation of new data where gaps exist.

Statistical data on use and disposal of household toxicants appears to be limited, particularly for the organic chemicals, though a complete literature search has not yet been completed. Preliminary research, however, indicates that many of EPA's priority pollutants can be found in commercially available products and that many of these chemicals are not listed in the ingredients or warnings on the label. Information that is more subjective in nature suggests there is a limited knowledge base among the general public on toxicants or on sewage treatment in general. The question which then arises is whether these small amounts of toxicants are finding their way into the sewerage system, and if so, do they accumulate to create a significant problem to wastewater systems and overall water quality.

Preliminary findings indicate the need to obtain more information and determine the feasibility of implementing programs to raise awareness and action levels in regard to toxicants in our waters. The following is my assessment of what steps can be taken to ascertain the need, resources, and interest in pursuing educational programs and secondly some of the program possibilities which would be applicable considering the subject area, target population, potential resources and interface with other organizations in the area.

6.2 NEEDS ASSESSMENT

In order to determine current knowledge levels in the target community, a formal survey of some sort can be taken; this will indicate potential areas of focus, the issues the community feels are important and what kind of support and interest exists for the programs at hand. This survey can be done on the telephone, in person or by mail. The population should be chosen randomly and enough people should be selected so that resulting data can be validly applied to the entire target population. Generally, return rates must be high (at least 80 percent) for the results to be valid. Therefore some sort of incentive must be included to encourage a good return.

Considering the needs of Metro and other factors like resources and time, I think a random sample mail survey of Metro's constituency would be the most appropriate. Approximately 500 questionnaires should constitute an adequate sample if the return rate is good and the data can be analyzed. I see the following questions as being important:

1) What does the population know about sewage treatment? about toxicants?

2) What kinds of household products do people have in their homes and gardens?*

3) What are current disposal practices in homes?

4) Where do people call with their questions concerning toxicants and disposal?

5) Are people concerned about the effects of toxicants on water quality?

6) Possibly some demographic statistics also (age. sex, etc.).

7) Would they be willing to change buying/disposal habits or participate in the program?

6.7. CONCLUSION

It is difficult, if not impossible, to regulate how a person uses and disposes of substances once in his/her possession. Point control on a house by house basis is not practical either economically or physically. "Shelf" control at retail stores through warning stickers or the actual removal of a product from the market will be more feasible when there is a greater data base on which to substantiate claims. Legal regulations on toxicants generally do not apply to private residences and the generation of small amounts of wastes.

Addressing the issue of toxicants in household use through education appears, therefore, to be the best method at this time of controlling the entry of toxicants into the sewerage systems and waterways from residential areas. Public education as a source-control method is based on the premise that people take action themselves; not because they have to but because they want to, in this case out of concern and commitment to protect the water environment and their own well-being.

Commitment and motivation occur when people perceive first of all that the issues raised are important and that they are of a high enough priority to initiate action. In order for this to happen, people must feel that water quality affects them personally. This is why, for example, it is beneficial to connect water quality with health and health habits. Strengthening this interrelationship helps to clarify why and how water quality can have a direct effect on people's lifestyles. It must be emphasized that people, as individuals, can do something about the problem. They may not be able to see results directly caused by their actions alone, but the collective activities and energies of people's efforts can indeed produce results which are noticeable. Thus, people must relate water quality to their own lifestyles and personal habits and take action accordingly.

In order to accept the change process, people need to feel comfortable with the subject (i.e. water quality in general and toxicants in particular) and perceive the need to do something positive about it. Since everyone is affected differently by experiences, any educational program must be approached from a number of angles so that learning and internalization has a chance to occur on whatever level is most conducive and motivating to the individual.

Repetition also influences learning. For example, seeing one brochure or film on a subject with no kind of followup may not provide the impetus to act on it. Reinforcing a message can stimulate and give the extra push needed to do something.

Involvement is one of the other crucial factors in planning and implementing a program. The target population must be included from the very beginning to help ensure success. They are, after all, the best indicators and guides in knowing what they need to know about toxicants and water quality and how that information can best be disseminated.

Public education aimed at toxicant source control must utilize these various concepts and processes if permanent positive behavior change is to occur. It is essential that the target population be considered as to its needs, present practices and beliefs. A series of programs on water quality and toxicants can then be implemented; the total effects of which will encourage, facilitate and initiate raised awareness and change on the part of the population affected.

These concepts can be applied towards programs which will stop the entry of toxic substances into our areawide waters. The goals of the Metro toxicant programs which deal with effective control measures for residential areas can be effectively implemented through education.

METRO
Municipality of Metropolitan Seattle

Exchange Bldg. • 821 Second Ave., Seattle, Washington 98104

September 22, 1981

MEMORANDUM

TO: Household Hazardous Waste Disposal Committee

FROM: Susan Ridgley SMR

SUBJECT: Summary of September 17 Meeting

Attendees: Pam Crocker-Davis--Audubon/WEC
Sue Mason--CWQAC
Steve Bobbink--Poison Control Center
Judy Fey--U.S. EPA
Claire Dyckman--Office of Environmental Education
Sue Snyder--Group Health
Bob Freimark--King County Cooperative Extension
Greg Bishop--Seattle/King County Health
Julie Sellick--DOE
Dave Galvin--Metro/Toxicant Control
Susan Ridgley--HHWD Project Staff

Summary of Meeting

I. Introductions and Welcome

II. Subcommittee Reports

- Oil Recycling organization meeting set for September 30.
- Technical Memoranda - Work is progressing much slower than anticipated, but what's been done looks very good. The Product Review Sections have been received, as well as accompanying appendices. These are in editing stage and should be finished in a week or so. Regulations Section and Documentation Sections almost finished as well. Looking now to getting it to typing the week of the 28th.
- David and Susan talked to Raleigh Farlow about the research results; he went through the chemicals and was able to give us a general feeling of the toxicity and hazard associated with each one. Susan will be setting up meetings next week with the subcommittees to go over this review.

- WEC's Hazardous Waste Conference on September 18 and 19 was attended by several of the committee members. A variety of toxics-related issues were presented at panel discussions and plenaries; Susan and Don Norman (WashPIRG) put on a workshop on household hazardous waste. The participants (about a dozen) heard about the problems associated with use and disposal, received a folder of printed material and had a chance to ask questions about areas that concerned them.

III. Pilot Projects Discussion

The discussion began with Susan giving a quick synopsis of the last meeting. Please refer to the minutes for that meeting if you did not attend.

There were three separate options that were presented for discussion; they are as follows:

#1 Totally Pragmatic
This would involve spending all the money on the projects themselves, and not doing any surveys. We would notify as many people as possible via handouts--say 3,000 handouts printed. These handouts would say something like:

--"Hi! We're Metro's HHWD committee, etc."

--"We're concerned about these products because.... "These products" should probably be only a limited number instead of the entire universe--concentrate on just pesticides and automotive waste, for example. We probably don't want to collect solvents,both because of their fire hazard and because we don't have a good alternative to their disposal in a municipal landfill.

--"If you have these products, and you're not planning on using them....
either take it here (location of collection site) or call this number."

We would then sit back and count the number of responses--either phone calls or deliveries to sites. That would result in a rough ratio of number contacted: number responded, and would tell us if people will respond at all. We would be able to spread this around the city and hopefully come up some kind of average.

#2 Survey Technique
In this option, we would do a citywide random telephone survey of 500 households to find out the general level of concern and certain "average" opinions. This survey might ask the following questions:

a. What do you think of when you hear the word "toxic"?

b. Do you have anything that you consider toxic in your home?

c. If so, what are they?

d. Do you have any of the following substances?(list)
(This is what we think is toxic.)

e. How important do you think this issue is?
(Do you care?)

f. Would you be willing to make a special effort to dispose of these substances?

g. Of the following alternatives, which would you be most willing to do? (list)

h. Would you be willing to do that alternative even if you had to pay money?

i. Would you be willing to change your buying habits?

j. Do you think that manufacturers should clearly label their products as to proper use and disposal and potential hazards?

k. Do you think industry should be taxed or otherwise pay for the proper disposal of the toxic household products that they produce?

At the same time that this survey is being given on a citywide basis, the same survey would also be done in a neighborhood. This neighborhood would be selected on the basis of judgement which would mean:

a. the "average" neighborhood which most closely parallels the demographic characteristics of the rest of the city (a perfectly average neighborhood is an impossibility);

b. the neighborhood that best fits certain criteria; e.g., most people have cars and a yard to change their oil or a high percentage of gardens;

c. a SORT neighborhood (see last meeting's minutes for description of SORT project) or one close to the Health Dept. sites or close to other resources.

However it was chosen, the survey of about 100 households would be conducted in this neighborhood. Then the pilot projects (i.e. leafletting and providing certain options) would be done in this same neighborhood. Exactly what the pilot project would consist of would depend partially on the results of the surveys. If the citizens expressed a clear preference for one of the options, then that option would be emphasized. The survey would also help us considerably in orienting the education materials.

What would we learn from this? We would find out:

1. What people think about the issue, citywide.
2. What people say they'd do, citywide.
3. What people in one neighborhood say they'd do versus what they actually do.
4. The success rate of the collection system chosen in that one neighborhood.

This would enable us to draw certain parallels between what people in the neighborhood do, and what people citywide might do. We would also have some idea about the likelihood of success of a citywide application of the collection system tested.

#3 Scientific Method
This would be exactly the same as the survey technique, except for one difference. Instead of choosing the neighborhod on judgement levels, we would do the survey in three to four neighborhoods and then choose the one that best fits our criteria (either most average or most likely to succeed or whatever).

We would learn exactly the same things from this method as from #2. It was suggested that we might want to do this one if we thought our results would be subject to critical review. It looks more logical and unbiased, and would be less sensitive to criticism. However, it is not in actuality any more "scientific" than the other. As long as we state clearly the basis for picking the neighborhoods, there is technically and statistically nothing wrong with doing that.

During the discussion which followed the presentation of these three options, a couple other alternatives were thought of. Judy noted that none of these options test the effects of education. She proposed that we setup twin neighborhoods (two fairly equal and alike), and do the totally pragmatic method in each. However, one would have heavy education; the other would have none. Then we would test the results and survey to find out why they did or did not respond. If we had enough money, we could also set up two neighborhoods and test the socioeconomic factor. One problem with this method is that there is no such thing as twin neighborhoods; inevitably we would be testing the difference in character rather than the difference in education. Also, if the pilot projects had low response, we would have spent all our money to no avail. If we surveyed first, it might help that problem.

Then Susan suggested that we might want to combine the totally pragmatic with a citywide random survey. We would leaflet the whole city, and use the Health Department sites as collection points. They would be less convenient for some, but still available. The advantage to this would be that we'd be able to use mass media--the most effective education tool given our time constraints, funds, and the audience we want to reach. The disadvantage is that we would lose all control

over how many people heard of the project and, therefore no yardstick to measure response rate.

Claire came up with a variation on this that we called the Irish Sweepstakes. In this option, we would use mass media to raise awareness; then tell that 1,000 people will receive leaflets, and if you get one, you'll have the option of disposing of your waste. In the after-survey, we would question those who didn't receive leaflets and ask if they had heard of the service and how they would have responded if they had had a chance. This gets at the lack of control problem (only 1,000 leaflets), reaches a wide range of people and would probably elicit a response from those who weren't previously "aware" (competition angle). The use of mass media also constitutes an efficient use of our education money. The problem with this is that we might end up testing the effectiveness of our media presentation; and it might not give us as clear an idea of the relationship between what people say they'll do and what they actually will do.

With all five alternatives having been presented (#1 Totally Pragmatic, #2 Survey Technique, #3 Scientific Method, #4 Twin Neighborhoods/Education, and #5 Irish Sweepstakes), we went on to a discussion of related points. Some of the areas of concern were:

Costs
All the different alternatives would ultimately cost the same--$10,000, which is all we have budgeted. However, the breakdowns of where we spend the money would differ, as follows:

Option	Survey	Pilot Project (Est.)
#1 Totally Pragmatic	- -	$10,000
#2 Survey Technique	$7,000	3,000
#3 Scientific Method	5,000	5,000
#4 Twin Neighborhoods	4,000	6,000
#5 Irish Sweepstakes	4,000	6,000

Timing
For the surveys, it will take about one month to get the bureaucratic machinery going and produce a contract (open bidding, pick winner, write contract, etc.). From the time they sign the contract until the finished report is done, it would be a minimum of five weeks and preferably eight weeks. Therefore, we're looking at a total time allowance for the survey alone from nine to 12 weeks.

For the pilot projects, we would probably only need about three to four weeks. People will tend to have a set amount of toxics in their home--their disposal action will only happen once. Therefore, we give a reasonable amount of time for them to do it, and then just stop.

Survey
There are a number of questions that the survey would enable us to answer, such as:

a. If the pilot projects fail to get a high response, we could find why--was it because the information presentation was poor (didn't pick the right words)?; people don't care?; we didn't give them enough time?

b. How many people actually have stuff on hand that they don't plan on using and want to dispose of? If the pilot projects get low response, it could be because people plan on using it up, or they have already made the decision not to use it.

c. Is there a particular time of year when they tend to have more toxics in their home? When would be the best time to have a Dump Day?

With the design of the surveys, we first should ask ourselves what we need to know to be able to draw some viable conclusions and then come up with the specific questions that we want to ask.

Viability

What do we want to be getting out of this? Do we want to be testing what people will do, or do we want to educate the public? This depends on what the probability is of Metro continuing this project. Should we be cautious and conservative and do #2 Survey Technique because we'll be able to use this data when we go on to something else? Or is this a one-time thing, and we need to heighten public awareness as much as possible with the time/money we have (i.e. do #5 Irish Sweepstakes). Is it more important to design this so that there will be a clear demonstration of need, or design it to use the results in coming up with a plan?

In response, Dave said that we don't really know what Metro is going to do. This project is actually EPA funded so it is more what EPA will do. It is a question of finding a funding source, and then any agency, Metro or whoever, could administer the funds. It could even be this committee working as an independent body. The results of the survey and pilot projects have a lot to do with the viability of the project. If they clearly demonstrate need, this would be a good selling point to convince any funding source, be it public or private.

In terms of heightening public awareness as much as possible, we do have an additional $2-4,000 budgeted after the pilot projects are over to use on an education campaign.

Education

It seems then, that it is very important to get as great a response level as possible in order to document need. Therefore, we need effective education (or promotion) on this idea--it should be jazzy, something more creative than the basic pamphlet. There are basically two kinds of approaches: first, the use of mass media where you superficially educate a great number of people, or second, the one-to-one contact needed for deep changes in attitudes (e.g. school curriculum, workshops, etc.). The latter approach is basically unfeasible given our time constaints.

How important is it that we test the effect of education on changing people's behavior? The Twin Neighborhoods (#4) option would do this. Also, if we split one neighborhood in two (e.g., the one neighborhood of #2 survey technique) and applied different educational modes in each half, you might be able to test this. The SORT project found that beyond the initial response, increased education did not increase the response rate. Perhaps we should simply take this result on as an assumption, and not attempt any follow-up on the initial education. Perhaps we could get at this question of education in the survey somehow.

Decision

The final unanimous decision of the committee was that we would go with #2 survey technique, with the following notes:

1. The $5,000 spent on the surveys must be firm; so that we have enough money to do effective promotion, and thereby get a clear demonstration of need.
2. The survey must be carefully crafted to get as much information as possible extracted for the money spent. We need to be thinking of what we want to know.
3. Because #2 isn't getting at the whole subject of education and its importance, we need to make some decision about how we will deal with that issue.

If any of the non-attendees have any questions or comments about the discussion or decision, please come to the next meeting where they can be aired. If you can't make the meeting, talk to Susan about your questions.

IV. Next Meeting

The next general meeting will be:

THURSDAY, OCTOBER 1
9:30 - 11:30 a.m.
ROOM 1057, OLD FEDERAL BUILDING
(south wing, take left from main entrance)

PLEASE NOTE CHANGE IN LOCATION

See you there!

SMR:sw

APPENDIX B:

INITIAL SURVEY QUESTIONNAIRE

QUESTIONNAIRE - TOXIC WASTE DISPOSAL

1. ____
2. ____
3. ____

Hello, my name is _____ with Leonard Guss Associates, an opinion research firm in Washington. We are doing a survey for the Water Pollution Control Department of Metro, to find out something about toxic substances in the home.

I need to speak with a head of the household. Are you eligible?

Yes ____ No ____ 4. ____

INTERVIEWER NOTE: IF "YES", CONTINUE WITH INTERVIEW. IF "NO", ASK IF AN ELIGIBLE INDIVIDUAL IS AVAILABLE. IF ONE IS NOT, TERMINATE. IF ONE COMES TO THE TELEPHONE, REPEAT THE INTRODUCTION AND PROCEED WITH THE INTERVIEW.

1. When you hear the term "toxic", what household products come to mind, other than drugs and pharmaceutical products? (INTERVIEWER NOTE: Check all products mentioned.)

____	Pesticides	5. ____
____	Household cleaners	6. ____
____	Motor oil or antifreeze	7. ____
____	Paints or thinners	8. ____
____	Wood preservatives	9. ____
____	Herbicides/Weed killers	10. ____
____	Fertilizers	11. ____
____	Auto or furniture polishes	12. ____
____	Drain openers	13. ____
____	Other (Write in) _____	14. ____

2. I am going to read a list of substances. Please tell me if any of them is currently in your dwelling, I would also like to know how hazardous you consider each of them, so please rate each one on a scale of one to five, with one being not at all hazardous, and five being very hazardous. (INTERVIEWER NOTE: Check items that are currently within the dwelling. Circle rating number.)

____	Pesticides	1	2	3	4	5	15. ____
____	Household cleaners	1	2	3	4	5	16. ____
____	Motor oil	1	2	3	4	5	17. ____
____	Antifreeze	1	2	3	4	5	18. ____
____	Paints or thinners	1	2	3	4	5	19. ____
____	Wood preservatives	1	2	3	4	5	20. ____
____	Weed killers	1	2	3	4	5	21. ____
____	Fertilizers	1	2	3	4	5	22. ____
____	Auto or furniture polishes	1	2	3	4	5	23. ____
____	Chemical drain openers	1	2	3	4	5	24. ____

3. Have you disposed of any of these kinds of materials in the last year or two?

Yes ____ No ____ Don't Know ____ 25. ____

IF YES: What were they, and how did you dispose of each one?

Material	Disposal Method		
_____	_____	26.__	27.__
_____	_____	28.__	29.__
_____	_____	30.__	31.__
_____	_____	32.__	33.__

4. How important to you is the question of disposing of toxic or hazardous substances currently found in your residence? Please rate your feelings on a scale of 1 to 5, with 5 being "very concerned", and 1 being "not at all concerned".

1 2 3 4 5 34.____

5. Would you be willing to buy smaller quantities of toxic and hazardous materials in order to help reduce disposal problems, even if it cost more?

Yes _____ No _____ Don't Know _____ 35.____

6. Would you be willing to buy alternative products to those toxic ones you currently use, if the alternatives were less toxic but still effective?

Yes _____ No _____ Maybe _____ Don't Know _____ 36.____

INTERVIEWER NOTE: IF "MAYBE", ASK "WHY DO YOU SAY THIS" _____

_____ 37.____

7. If there were a way to dispose of toxic products into a nearby community waste disposal center or similar spot, would you make an effort to do this?

Yes _____ No _____ Don't Know _____ 38.____

INTERVIEWER NOTE: IF "NO" SKIP TO QUESTION 9.

8. Metro is considering four different disposal options for toxic and hazardous substances. Would you please tell us whether or not you would definitely use each service, might use each service, or would not use each service?

a. A neighborhood "Dump Day" where all hazardous wastes would be collected at neighborhood sites and taken away.

Would _____ Might _____ Not _____ 39.____

b. A neighborhood oil recycling collection site, where people could dispose of used motor oil.

Would _____ Might _____ Not _____ 40.____

c. A permanant neighborhood collection site for free disposal of other toxic and hazardous wastes.

Would _____ Might _____ Not _____ 41.____

A similar site that citizens had to pay to use.

Would _____ Might _____ Not _____ 42.____

d. A free service that would come to people's homes to collect toxic or hazardous wastes.

Would _____ Might _____ Not _____ 43.____

A similar service that charged a fee.

Would _____ Might _____ Not _____ 44.____

To help us in our statistical analysis, would you tell us:

9. Do you own your home, or do you rent?

Own _____ Rent _____ 45.____

10. Do you change the oil and/or antifreeze in your automobile yourself?

Oil _____ Antifreeze _____ Both _____ Neither _____ 46.____

11. How many people live in your household? _____ 47.____

12. Are there any children under the age of six within the household?

Yes ____ No ____ 48.____

13. With regard to your education, did you complete:

____ Grade School
____ High School
____ Trade School 49.____
____ Some College
____ Four/more years of college
____ Refused

14. Is your annual household income:

____ Under $15,000/year
____ $15,000 - $25,000/year 50.____
____ $25,000 - $35,000/year
____ Over $35,000/year
____ Refused

Thank you very much.

Sex: Male ____ 51.____
Female ____

Concentrated Region ____
General City ____

Telephone Number ____ 52.____
Interviewer"s Initials ____

Time Completed ____

APPENDIX C:

"WASTE INFORMATION" INVENTORY SHEETS

The On-Site Quiz

Group #1

Number: 1
Date: 9 FEBRUARY 82
Time: 2:45 pm

WASTE INFORMATION

Labelled

General Class	Brand Name	Contents	Quantity	Age
PESTICIDES: (Group 1)	MILLERS	ALDRIN	1 PT.	2 YRS
	ORTHO	LEAD ARSENATE	2 LBS.	10 yrs.
	MILLERS SOILDUSTO	CHLORDANE	1 LB.	1 yr
	MILLERS KARASPA	NITROPHENOLS	1 LB	2 yrs
	ORTHO CHICKWEED	SILVEX	8 FL. OZ.	2 yrs
	MILLERS TETRADANE	LINDANE	"	2 yrs
	COREX	CALCIUM POLYSULFIDES	1 QT.	2 yrs
	MILLERS PURASPA	PHENYL MERCURY TRI-ETHANOL-AMMONIUM LACTATE	1 PT.	2 yrs.
	BARFOOT FUNGICIDE	COPPER-MERCURY SULFO-IODO-	4 oz.	5 yrs
Lab Cat (contains)	ANT KILL	WHITE LEAD ARSENATE	2 FL. OZ.	10 yrs

~~Unlabelled~~

General Class ~~Consumer's Guess~~	Brand Name ~~Test Results~~	Contents	Quantity	Age
PESTICIDES	ORTHO OIL SPRAY	PETROLEUM OILS	1 PT.	2-5 yrs
	MILLER CONTROL	PYRETHRINS, ROTENONE	1 PT.	5 yrs
	MAN KLENOL	OIL OF TURPENTINE	1 PT.	5 yrs
	SCIENCE FUNGICIDE	MANGANESE, ZINC, ETHYLENE-BIS-DITHIOLCARBAMATE	8 oz.	10 yrs.

The On-Site Quiz

Dakota #1

Number: 02
Date: 12 FEB 81 (FRI)
Time: 12:10 PM.

WASTE INFORMATION

Labelled

General Class	Brand Name	Contents	Quantity	Age
PESTICIDE	MILLERS	DIAZINON	8 OZ. PARTLY DILUTED	2 YRS.

Unlabelled

General Class	Consumer's Guess	Test Results	Quantity	Age

The On-Site Quiz

Number: 03
Date: 13 FEB 82 (SAT)
Time: 1:35 PM.

WASTE INFORMATION

Labelled

General Class	Brand Name	Contents	Quantity	Age
PESTICIDE	ZERODANE	CHLORDANE	4 OZ.	~15 YRS.
PESTICIDE	FORLES MOLE KILLER	ARSENIC TRI-OXIDE	5½ OZ	~20 YRS.
"	ORTHO PHALTAN	FOLPET	6 OZ.	~10 YRS.
"	ORTHO POLYSORAY	CALCIUM POLYSULFIDE	1 QT.	~10 YRS
"	ORTHO ANT SPRAY	CHLORDANE	1 PT	~10 YRS
"	"	"	"	"

Unlabelled

General Class	Consumer's Guess	Test Results	Quantity	Age
PESTICIDE - IN ORTHO BOTTLE -		SAYS IS CHLORDANE	1 PT	

The On-Site Quiz

Garbage #1

Number: 4
Date: 15 FEB (Mon)
Time: 2:00 p.m.

WASTE INFORMATION

Labelled

General Class	Brand Name	Contents	Quantity	Age
PESTICIDE	OPTHO LAWN CONTROL	CAPTAN CHLORONITRO-BENZO PHENOL	2 LBS	AT LEAST 15 yrs
PESTICIDE	ACME DUSTING SULPHUR	SULPHUR	2 LBS	AT LEAST 15 yrs
PESTICIDE	VIGARO WEED KILL	2,4-D 2,4,5T	1 QT	" " 15 yrs
PESTICIDE	MILLERS	DIAZINON	1 LB	" 15 yr
PESTICIDE	OPTHO LAWN SPRAY	DICHLORO-DI PHENYL TRICHLOROETHANE	~~1 QT~~ 1 QT.	" 15 yrs
PESTICIDE	ACME PESTROY	DDT	1 QT.	" 15 yr
PESTICIDE	PARATH	CHLORDANE	1 QT	" 15 yr

Unlabelled

General Class	Consumer's Guess	Test Results	Quantity	Age

The On-Site Quiz

Number: 05
Date: 2-17-82
Time: 4:00 pm

WASTE INFORMATION

Labelled

General Class	Brand Name	Contents	Quantity	Age
Pesticide	Ortho Klor-44	chlordane	1 pt	at least 5 yrs
"	Ortho Fruit Tree Spray	DDT Malathion	1 pt	"
"	Ortho Bug-geta pellets	calcium arsenate metaldehyde	12 oz	"
"	DuPont Aphid + Mite Spray	Malathion (50%)	4 oz	"
"	Isotox insect spray	Carbaryl 1,1 bis(p-chlorophenyl) 2,2,2 trichloroethane → DDT	8 oz	"
"	Flit insecticide	unknown petroleum mix	1 pt	" (was II
"	Ortho Klor-74	Chlordane	8 oz	"

Unlabelled

General Class	Consumer's Guess	Test Results	Quantity	Age
"	Millers Soildusto	Chlordane Captan Sulphur	1 lb. 14 oz	at least 5 yrs.
"	Miller's slugspra-50	Metaldehyde	8 oz	"
"	Watkin's Concentrate	45% chlordane	8 oz	"
"	Weedone	2,4 D 2,4,5T	8 oz	"

Barrel #2

The On-Site Quiz

Number: 06
Date: 2-17-82
Time: 5:20

WASTE INFORMATION

Labelled

General Class	Brand Name	Contents	Quantity	Age
Solvent	C&C	petroleum distillate	1 qt.	at least 5 yrs.

Unlabelled

General Class	Consumer's Guess	Test Results	Quantity	Age

The On-Site Quiz

Number: 7
Date: 20 FEB (SAT)
Time: 12:20 pm.

WASTE INFORMATION

Labelled

General Class	Brand Name	Contents	Quantity	Age
PESTICIDE	CHEVRON	WETTABLE DDT	5 LBS	10 YRS.
"	ORTHO	LINDANE	8 OZ.	5 YRS.
"	APEX	DDT	8 OZ.	5 YRS.
CYANIDE	DUPONT SHELLS FOR CORROSION REMOVAL	CYANIDE SALT	10 LBS.	AT LEAST 40 YRS
CYANIDE	IN PAINT CAN	CYANIDE SALT	6 OZ.	40 YRS OLD.

Unlabelled

General Class	Consumer's Guess	Test Results	Quantity	Age

The On-Site Quiz

Barrel #2

Number: 8
Date: 2-21-82
Time: 3:40PM.

WASTE INFORMATION

Labelled

General Class	Brand Name	Contents	Quantity	Age

Unlabelled

General Class	Consumer's Guess	Test Results	Quantity	Age
Solvent	Stempel Fire Extinguisher Co. "Miracle" Fire Extinguisher Phila., Penna.	Carbon Tetrachloride	1 pint	30-50 yrs.

Initially put in separate barrel #4, later consolidated with flammable solvents in barrel #2, finally disposed with pesticides in barrel #5.

The On-Site Quiz

Number: 9
Date:
Time: 25 FEB 82 BEFORE 2 PM

WASTE INFORMATION

Labelled

General Class	Brand Name	Contents	Quantity	Age
PESTICIDES	SCOTTS	DISODIUM METHARSENATE	11 1/2 LB	
BARREL #5	GRANTS ANT CONTROL	ARSENIC TRIOXIDE	1 LB	
	ANTROL ANT KILL	SODIUM ARSENATE	1 PT CAN	
	D-CON	WARFARIN	1 LB	
PESTICIDE SPRAYER LEAKING WITH STRONG HYDROGEN SULFIDE SMELL				1 QT.
THIS WAS PUT IN BARREL # 5 AS A PESTICIDE AND A 50 LB BAG OF QUICK SCRIBS WAS POURED OVER IT.				
PESTICIDES	SCOTTS ERASE	DIMETHYL ARSINIC ACID	5 LBS	
	MILLERS SOIL DUST	SHEPTACHLOR & CAPTANS	1 LB	
BARREL #5	ORTHO	CHLORDANE	1 LB	
	MILLERS PUMPSPRAY	PHENYL MERCURY	1 QT	
	PESTROY	DDT	1 PT	
[redacted]				
General Class	~~Commercial Guess~~	~~Technical~~	~~Quantity~~	~~Age~~
FLAMMABLE SOLVENTS	BLACK SILK STOVE POLISH	NAPTHA	6 FL OZ.	
"		PENATROL	1 QT CAN	
"	SEYMOUR	PETROLEUM DISTILLATES	6 OZ.	
"	JOHNSON	GASOLINE LUBRICANT	2-1 PT CANS.	
THESE WERE PUT IN BARREL # 2				

The On-Site Quiz Bairdstt # 5

Number: 10
Date: 25 FEB 82
Time: 3:30 pm.

WASTE INFORMATION

Labelled

General Class	Brand Name	Contents	Quantity	Age
INSECTICIDE	Vigaro	Chlordane	1 PT	~10 yrs.
"	Sears Spray	DDT	1 PT	~10 yrs.

Unlabelled

General Class	Consumer's Guess	Test Results	Quantity	Age

The On-Site Quiz

Number: 11
Date: 26 FEB (FRI)
Time: 4:55 PM

WASTE INFORMATION

Labelled

General Class	Brand Name	Contents	Quantity	Age
Pesticide	Ortho Dormant	~~Dry~~ Calcium Polysulfides	1 QT	~8 yrs
Pesticide	Millers	24D 245T	1 pt	~10 yrs
	Hartz	~~[illegible]~~ Pyrethrins	8 oz	~5 yrs

Unlabelled

General Class	Consumer's Guess	Test Results	Quantity	Age

The On-Site Quiz

Number: 12
Date: 2/27/82
Time: 11:45 Am

WASTE INFORMATION

Barrel #5

Labelled

General Class	Brand Name	Contents	Quantity	Age
Pesticides	Isotox	Lindane, Malathion, DDD	1/2 cup	9+ yrs.
	Millers	Metasystox-R (Methyl-Demeton) Dylox-R (Trichlorfon) Dimethyl Phosphenate Xylene	3/4 cup	9+
M	Millers	Chlordane	3/4 cup	9+
	ortho	Chlordane	1 cup	9+

Unlabelled

General Class	Consumer's Guess	Test Results	Quantity	Age

The On-Site Quiz

Label #5

Number: 13
Date: 2-28-82
Time: 12:10 pm

WASTE INFORMATION

Labelled

General Class	Brand Name	Contents	Quantity	Age
Pesticide	Korrect Lime-Sulphur Spray	Calcium Polysulfide	1 pt	5 yrs
"	Vigoro Cutworm & Lawn Moth Killer	Toxaphene DDT Chlordane	1 pt	"
"	Ortho Dibrom Lawn Insect Spray	Naled Lindane	½ gal	"

Unlabelled

General Class	Consumer's Guess	Test Results	Quantity	Age

The On-Site Quiz — Sheet #5

Number: 14
Date: 3-28-82
Time: 3:50

WASTE INFORMATION

Labelled

General Class	Brand Name	Contents	Quantity	Age
Pesticide	Sears Weed & Grass Killer	• 2 (Methoxy-4,6-bis (isopropylamino) S-triazine • Pentachlorophenol • other chlor. phenols	1 qt	unknown
	Ortho Isotox Insect. Spray	• Carbaryl • S[2-(Ethylsulfinyl) ethyl] 0,0-dimethyl phosphorothioate • 1,1 bis (p-chlorophenyl)-2,2,2 trichloroethanol) • petroleum solvent	1 pt	"

Unlabelled

General Class	Consumer's Guess	Test Results	Quantity	Age
	Ortho Isotox	Same	Same	"
	Eveready Lawn weed killer	Iso-octyl ester of 2,4 D. Iso-octyl ester of 2,4,5-t	8 oz	"
	Lawn weed Killer - Blackleaf	2,4-D 2,4,5-T	8 oz	"
	Miller's Kara-spra (Karathane)	• Dinitro (1-methyl heptyl) phenyl crotonate • other nitro phenols + derivatives	1 lb	"
	Eveready Lawn Weed Killer	2,4,D 2,4,5-T	8 oz	"

The On-Site Quiz

Number: 14
Date: 2-28-82
Time: 3.50

WASTE INFORMATION

Labelled

General Class	Brand Name	Contents	Quantity	Age
Pesticide	Miller's Granular Noxall Vegetation Killer	Na Metaborate Tetrahydrate Na chlorate Diuron	1 lb 14 oz	unknown
	Ortho Multipurpose garden spray	Copper oleate pyrethrin rotenone pine, petroleum oil	8 oz	"
	Best tomato & vegetable dust	Malathion carbaryl Maneb Sevin	10 oz	"
↓	Best Diazinon Insect	Diazinon	1 pt	"
Unlabelled General Class	Spray	petroleum solvent		
	~~Consumer's Guess~~	~~Test Results~~	~~Quantity~~	~~Age~~
	Ortho Weed-B-Gon-Jet Weeder	Diethanolamine salt of 2,4-Dichlorophenoxyacetic acid (2,4,D) Diethanolamine salt of 2-(2-Methyl-4-chlorophenoxy) propionic acid	1 lb. 7 oz	"
	Ortho-Weed B Gone Jet Weeder	same	same	"
↓				

The On-Site Quiz

Site # 5

Number: 15
Date: 2-28-82
Time: 4:10

WASTE INFORMATION

Labelled

General Class	Brand Name	Contents	Quantity	Age
Pesticide	Ortho Diazinon Soil & Foliage Dust	~~2 #~~ Diazinon	2#	< 5 yrs
	Sears Broadleaf weed killer	2,4 D Dicamba (3,6-Dichloro-o-anisic acid)	1 pt	unknown
	Red Devil weed killer	2,4 D	1 lb 8 oz	unknown
	Sears weed + feed	2,4 D Silvex	~4 lbs.	unknown
	Ag-West weed & feed	2,4 D	20 lb.	unknown

Unlabelled

General Class	Consumer's Guess	Test Results	Quantity	Age
pesticide	unknown.	no test - ~~no~~ granular solid	1 qt	unknown

APPENDIX D:

FOLLOW-UP SURVEY QUESTIONNAIRE

Preceding page blank

QUESTIONNAIRE - TOXIC WASTE DISPOSAL: WAVE II

Hello, my name is _____ with Leonard Guss Associates, an opinion research firm in Washington. We are doing a survey for the Water Pollution Control Department of Metro, to find out something about disposing of toxic or hazardous substances used in the home. The information from this survey will be used for future planning.

I need to speak with a head of the household. Are you eligible?

Yes ____ No ____

INTERVIEWER NOTE: IF "YES", CONTINUE WITH INTERVIEW. IF "NO", ASK IF AN ELIGIBLE INDIVIDUAL IS AVAILABLE. IF ONE IS NOT, TERMINATE. IF ONE COMES TO THE TELEPHONE, REPEAT THE INTRODUCTION AND PROCEED WITH THE INTERVIEW.

1. Did you know that Metro just completed a pilot project dealing with household toxicants, and their disposal, in your neighborhood?

Yes ____ No ____ 1 ___

IF YES: How did you learn about the project?

_____ 2 ___
_____
_____

IF NO, OR IF NO BROCHURE IS MENTIONED: Did you receive a flyer and a brochure from Metro dealing with this subject during the past month?

Yes ____ No ____ Don't Know ____ 3 ___

(IF "NO" OR "DON'T KNOW", SKIP TO QUESTION 3. IF "YES", GO ON TO QUESTION 2.)

2. Did you participate in the project?

Yes ____ No ____ 4 ___

IF YES: What sort of actions did you take? Did you (Read the list and check those actions taken.)

Read the material _____
Check the garage and/or household for presence of toxicants _____
Take things to the fire station _____
Take oil to the service station _____
Discuss issue with a friend/relation _____
Change your buying habits _____
Anything else? (If yes, "What?") _____

3. What was the reason you participated (did not participate) in the pilot project?

_____ 5 ___
_____

Anything else?

_____
_____

4. Do you have any household products in your possession right now that you consider hazardous, and would like to throw away?

Yes ____ No ____ Don't Know ____ 6 ___

IF YES, What are they? _____ 7 ___

_____

5. Would you be likely to use collection sites for household toxicants at some future date, if they were available to you?

Yes ____ No ____ Don't Know ____ 8 ___

6. Do you feel a toxicant disposal service should be funded by local governments or paid for by the users themselves, with a usage charge?

Local Governments ___ Users ___ Don't Know ___ 9 ___

7A. When you think about the topic of disposal of household toxicants, is your concern with it primarily?

Your personal/family's health _____ 10 ___

The potential environmental impact _____

Something else _____

(If "Something else": what? _____

_____)

7B. How would you rate your feelings regarding household toxicant disposal, on a scale of 1 to 5, with one being very important and five being very unimportant, ?

Very Important				Very Unimportant	
1	2	3	4	5	11 ___

8. Is your annual household income: 12 ___

____ Under $15,000/year

____ $15,000 - $25,000/year

____ $25,000 - $35,000/year

____ Over $35,000/year

____ Refused

Thank you very much.

Sex: Male _____ 13 ___

Female _____

Telephone Number _____

Interviewer's Initials _____

Date Completed _____